

# Air Conditioning & Refrigeration News

The Newspaper of the Industry

VOL. 30, NO. 9, SERIAL No. 588  
ESTABLISHED 1926

Entered as second-class  
matter Aug. 1, 1927

Trade Mark Registered U. S. Patent Office.  
Member Audit Bureau of Circulations. Member Associated Business Papers.

Written to Be Read on Arrival

ISSUED EVERY WEDNESDAY  
\$4.00 PER YEAR

## IN THIS ISSUE

### The Smaller the Bigger!

Smaller families need bigger refrigerators! That's a reversal of everything that electric refrigerator dealers and salesmen have been taught, but a Colorado dealer swears it's true, and says housewives back him up. For this and other unusual sales slants, see page 6.

### Specifying a Refrigerator

Refrigerator specifications for architects and builders. Frigidaire has drawn up a proposed set of such specifications, and while you may not agree with them, you may be interested in the form and detail of these specifications. Page 16.

### Controlling Flooded Systems

Flooded evaporators are again getting the attention of the refrigeration industry. But to get the best results from flooded systems requires proper application knowledge. First of a series of articles on refrigerant control in flooded evaporators will be found on page 15.

### A Customer's Warning

Mechanically refrigerated ice cream cabinets marked the beginnings of the small commercial machine industry, and have been taken as a matter of course since. But an ice cream manufacturer warns that unless improvements are forthcoming, this market could well be lost to another type of refrigeration. Page 14.

### 'Lookers' Into Buyers

Would you like to turn 50% of the "lookers" who come into your store into buyers? Thompson & Hamilton, Inc., Columbus, Ohio dealer, claims to do just that, and on page 4 is an outline of some of the selling and promotion methods used by this firm.

### Research Data Condensed

The results of much recent research in heating, ventilating, and air conditioning fields—everything from cold noses to sprinkled roofs—is condensed for you on page 8.

### One Man's Place In a Trend

One of the significant trends in the refrigeration industry in the past few years is the development of independent service men into large-sized dealership operations. An example of this is the story of the growth of the business of C. J. Roberts, told on page 17.

### Display For a Jobber

In another of his series on better displays in the supply jobber's store, "Zeke" Carrithers tells how jobbers can get a display done expertly but inexpensively—and gives an actual example. Page 13.

### Cooling a Super-Market

Will the air conditioning of Carls super-market in Miami start a trend? The proprietor tells J. L. Rossmiller that there are four major purposes for air conditioning such a market, and points the way to a new market possibility. Page 9.

### Radiant Heating & Cooling

There's been a lot of talk about the theory of radiant heating and cooling, but this phase of air conditioning is actually put to work in the system installed in the recently completed Bankers Life Building in Des Moines, Iowa. How the radiant method is used to offset wall losses is described on page 12.

### More of 'What's New'

A guide to new products and gadgets particularly for installation and service work is given in the "What's New" column on page 18.

DETROIT, MICHIGAN, JUNE 26, 1940

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## Association of Distributors Is Being Promoted

### Committee Meets Officers Of N.E.W.A. and Plans 'Group Within a Group'

LOS ANGELES—A representative group of appliance distributors here has been holding a series of conferences for the "group discussion of advertising rates" in an attempt to check predatory practices by which a certain class of newspapers encouraged dealers to engage in "double billing" of advertising. Robert Sample, department manager of the Better Business Bureau, served as impartial referee in the discussions.

This situation arises out of the fact that many manufacturers and distributors offer to pay half the cost of advertising done by the dealer. "Double billing" is the practice of supplying an invoice at a rate considerably higher than the actual or net rate, so that the dealer gets his advertising at a very low cost or for nothing.

Recent investigations disclosed that many retailers had failed to realize the lack of ethics in succumbing to this sort of pressure from media apparently unable to sell space in any other way.

A typical case cited by the group of distributors was that in which one paper claimed a rate of 75 cents per column inch for dealers and the dealer paid a net of 45 cents. When "double billed" the dealer received 37½ cents rebate from the distributor and obtained his advertising for 7½ cents.

Another case showed that a dealer, encouraged by a space salesman, was actually making money on this type of advertising.

Without formal organization of any sort, the distributor's group, meeting several times a month, might be termed a loose cooperative which proposes to pass on such information as will enable each distributor's advertising department to determine the exact extent of its

(Concluded on Page 20, Column 1)

### N. Y. Contractors Answer Government Charges

NEW YORK CITY—"No crime." That is the answer of 16 individuals and the New York Electrical Contractors' Association, Inc., the Heating, Piping & Air Conditioning Contractors, New York City Association, Inc., Association of Contracting Plumbers of the City of New York, Building Trades Employers' Association of the City of New York, and Local No. 3 of the International Brotherhood of Electrical Workers, to charges made by the government that they had restricted interstate commerce.

Attorneys for the defendants have filed a demurrer in which it is claimed the indictment handed down several weeks ago by the Federal Grand Jury here fails to mention a

model intended to retail at well under \$200.

Designated as Model CSF-630, this new unit features a "Super Freez'r Shelf," an extra capacity frozen food compartment, chill drawer, and sliding twin vegetable fresheners.

Listing at approximately \$189.95 in the New York area, the new Gibson is said to provide "an unheard of long profit."

### G-E Forms Section to Promote Rural Sales

BRIDGEPORT, Conn.—To promote the sale of products of the General Electric appliance and merchandise department to the farm market, a new farm sales section of the department has been formed here. George E. Mullin, Jr., has been appointed manager of the section, reporting to C. M. Snyder and to J. M. Crawford for activities affecting respectively.

(Concluded on Page 5, Column 1)

### Fancy Skating To Sell Comfort Cooling



This wintry scene in reality is a summer window display. The girl is skating on real ice—the tiny rink (said to be the smallest ever built) was designed by the York Ice Machinery Corp. The whole display, which advertises Philco-York air conditioning units, is portable and can be readily moved from one store to another.

## Stuart Will Direct Kitchen Plan Group



J. NELSON STUART

NEW YORK CITY—J. Nelson Stuart, Kelvinator advertising director, will be chairman of the Modern Kitchen Bureau's plan committee for 1941, Bureau headquarters announced last week. W. A. Grove of Hotpoint will serve as vice chairman.

Walter H. Sammis, president of Consumers Power Co. and vice president of Commonwealth & Southern Corp., has been re-elected by the bureau's executive committee as chairman for 1941.

### Air Conditioner Sales in Chicago Increase in May

OMAHA, Neb.—Rumors going the rounds here would have Baker Ice Machine Co. installing air conditioning equipment in U. S. Army tanks, as part of this country's rapidly expanding program of national defense.

J. M. Fernald, Baker's general manager, has denied hearing any mention of such a plan, but has expressed the opinion that the underlying idea is sound.

The Baker organization has done considerable business in the air conditioning of buses, trucks, and other transportation units.

### Gibson Builds Deluxe '6' To Sell Under \$200

GREENVILLE, Mich.—Apparently bidding for an increased share of the upper-price-bracket refrigerator business to supplement its production of "price leader" models, Gibson Electric Refrigerator Corp. has announced a new deluxe 6-cu. ft. model intended to retail at well under \$200.

Designated as Model CSF-630, this new unit features a "Super Freez'r Shelf," an extra capacity frozen food compartment, chill drawer, and sliding twin vegetable fresheners.

Listing at approximately \$189.95 in the New York area, the new Gibson is said to provide "an unheard of long profit."

### Densmore Directs Sales For Youngstown Steel

WARREN, Ohio—R. E. Densmore, formerly field sales manager for all Norge appliances and one-time assistant vice president in charge of sales for Kelvinator, has been appointed national sales supervisor of the Youngstown Pressed Steel division of Mullins Mfg. Corp., manufacturer of all-steel kitchens.

Marshall Adams, formerly engaged in merchandising of appliances for Westinghouse and in sales promotion for American Radiator & Standard Sanitary Corp., has joined the same organization to direct the merchandising of "Youngstown" kitchens.

## Californians Hit Discount Selling With New Plan

### 'War Chest' Collected By Stamps To Finance Paid Investigators

LOS ANGELES—"Mr. Dealer, you're being robbed . . ." With this startling declaration, the newly organized California Home Furnishings Institute is bidding for the support of all southern California appliance and housewares dealers in its effort to track down and eliminate the "I'll get it for you wholesale" type of operator whom the institute claims is stealing about 30% of the business away from legitimate retailers.

Actively backed by the Retail Furniture Association of Southern California, the institute has wasted no time in launching an aggressive, hard-hitting campaign which calls for financing of the drive by a monthly tax levied on retailers but collected by manufacturers or distributors, and for policing of trade diversion activities by a force of investigators hired especially for this duty.

The "Piracy Fight Tax," to be paid monthly by all cooperating dealers, amounts to one-tenth of 1% (five cents on every \$50) of each dealer's actual wholesale purchases for the month.

To start the wheels of the unique collection plan on which this tax is based, all retailers joining in the movement sign a statement authorizing all their suppliers to purchase in advance a quantity of stamps made available by the California Home Furnishings Institute. The distributors or manufacturers then attach to each dealer's statement the proper number of tax stamps, and the dealers reimburse their suppliers for the indicated amount.

In a bulletin issued by the furniture association it was stated that "102 of the most prominent home furnishings retailers in and around Los Angeles" had signed the authorization form by the middle of May. The bulletin spoke of a potential membership of more than 1,000 retailers in the Los Angeles area alone, and of some 2,000 in all southern California.

If 500 or more of these dealers affiliate themselves with the institute, a "war chest" of between \$2,000 and \$3,000 a month would be available to carry on the fight against direct selling, in the opinion of Phil Batelle, managing director of the furniture association.

The institute plans no direct approach to manufacturers and distributors until an imposing number of retailers have joined the cause. So far, reports Alvin Wilder, temporary chairman and acting manager of the institute, it is planned that only manufacturers in California will be asked to participate.

In enlarging upon the way in which the plan will be put into effect,

(Concluded on Page 20, Column 2)

### Knoxville Average Box Price In May \$134

KNOXVILLE, Tenn.—Electric refrigerators topped all other major appliances, including even radios, by a wide margin in sales here during May, according to figures released by the Knoxville Electric Power & Water Board.

Refrigerator sales for the month totaled 555 units valued at \$80,397, while radios, second high in the month's listings, ran a poor second with 425 units valued at \$14,363.

Despite the introduction this year by most major manufacturers of special low-priced leaders, average

(Concluded on Page 5, Column 2)

**Hotpoint Veteran Dies**

M. H. BEEKMAN

**170,209 Vacuums Sold In April For 36% Gain**

CLEVELAND — Vacuum cleaner sales for April jumped 36% over April sales last year to hit a total of 170,209, reports the Vacuum Cleaner Manufacturers Association.

Sales for the first four months of the year totaled 612,879 units, an increase of 24% over the same period of 1939.

**MASTERCRAFT ADJUSTABLE PAD and CARRYING HARNESS**

Efficient, sturdy and economical. Provides safer handling and thorough protection of refrigerators. Pad and harness are separately units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad \$8.75 each  
Adjustable Harness \$6.25 each  
f.o.b. Chicago.

Lettering on pad at only \$1.00 per order extra.  
Write for latest folder and prices on pads for refrigerators, washers, irons, ranges, radios, etc.

**BEARSE MANUFACTURING COMPANY**  
INCORPORATED 1921  
3815-3825 Cortland Street, Chicago, Illinois

**M. H. Beekman Drops Dead At Convention In Cincinnati Hotel**

CHICAGO—M. H. Beekman, manager of Hotpoint's kitchen sanitation division, died suddenly of a heart attack June 11 in his hotel room in Cincinnati, where he was attending a convention.

Mr. Beekman joined Edison General Electric Appliance Co. (maker of Hotpoint products) in 1921 as assistant to the Chicago district manager. Soon he became manager of the service department, then manager of the appliance division, which at that time furnished a major portion of the company's sales volume.

When the Hotpoint organization turned its full attention to the manufacture and sale of major home appliances, Mr. Beekman became manager of the company's New York district. Later he became manager of the Philadelphia district, where he served until October, 1937, when he returned to headquarters at Chicago to assume charge (as manager) of the newly formed kitchen sanitation division.

**Washington Water Power Co. Wins \$1,000****Award For Best Water Heater Promotion Job**

SPOKANE, Wash.—Washington Water Power Co. has been awarded the trophy and cash prize of \$1,000 offered by the Modern Kitchen Bureau in a contest for the best all-around water heater job performed by any operating utility company in the United States during 1939. The award was announced at the recent Edison Electric Institute convention at Atlantic City.

The winning company sold during the year a total of 2,432 electric water heaters, a 52% increase over 1938. It increased its saturation figure from 23.1% to 25.9%.

The utility conducted three separate water heater campaigns. The first, from March 20 to Oct. 7, was featured by prize trips to the World's Fairs at San Francisco and New York. The other campaigns preceded the Thanksgiving and Christmas seasons.

An intensive use of newspaper advertising in the five daily and some 50 weekly newspapers in the company's territory was an important factor in the program. These

**Frigidaire Creates A 'Back Through the Years' Display**

These miniature reproductions of stepping stones in the development of the modern Frigidaire are part of the General Motors exhibit at the New York World's Fair. Domeire and Guardian were Frigidaire controlled.

**McCall Awards Offered To Home Service Directors**

NEW YORK CITY—Establishment of the Laura McCall Awards, to be presented annually to the three home service directors of those electric companies which make the most outstanding contribution to better living through the promotion of electrical appliances, has been announced by the Prize Award Committee of the Edison Electric Institute.

Donated by the publishers of McCall's Magazine, the awards include cash prizes of \$100 for first place, \$50 for second, and \$25 for third.

**Sam's Selling Slants**

V. E. ("Sam") Vining, supervisor of department store sales for Westinghouse, is the industry's most colorful salesman. This is the fourth of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937, and later was published as a pocket-size book.

**ROMANCE**

How about using a little romance now and then?

There is an interesting story back of everything you sell. And the world loves a story,—and a story teller.

Find that story—if for no other reason, it will add to the pride of possession.

I remember when my grandfather bought his first wood-burning cookstove, with the oven underneath.

He took every opportunity of displaying it to the neighbors. And at the close of each demonstration he always let the oven door down and stood on it, in exact imitation of the clerk who sold it to him.

I don't remember Grandmother ever standing on the oven door to do her cooking but she was as proud of the demonstration as her spouse.

That was Grandpa.

Some months ago I bought a string of inexpensive beads. A wise salesman told me the story of their manufacture and importation. With the gift, I told the story to my wife, and I have heard her repeat it many times.

You figure the difference between Grandpa and me.

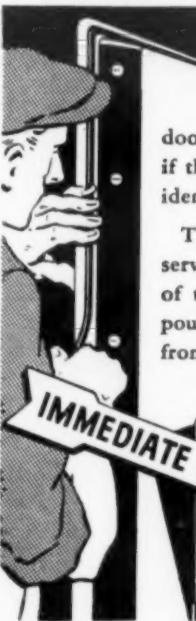
Every home has its quota of possessions valued for the story built around them—because they give pleasure beyond utility.

But, you say, you sell prosaic things.

Maybe:

Tomatoes were once considered rank poison; potato blossoms were once worn as flowers by the nobility of France by Royal Order of the King; and Julius Caesar made his legionnaires shave because in battle, barbarians grabbed them by the beard before swinging at the neck;—romance at every turn—romance in every business.

Romance—make it pay dividends.

**SELL THE "ORIGINAL EQUIPMENT" LINE OF Miller Replacement Door Gaskets**

★ Service men who take pride in their work come to Miller for their replacement door gaskets. Why? Because they know that Miller, as the largest supplier of rubber door gaskets to the refrigeration industry, is their logical source if they wish to replace original gaskets with ones which are identical both in design and quality.

The Miller line of replacement door gaskets enables you to service 80% of all refrigerators regardless of make. Every one of the 34 different types is made of rubber specially compounded for resistance to grease, aging, and wear, and produced from the original equipment dies.

To obtain price list and dimensional drawings, call your local jobber or write

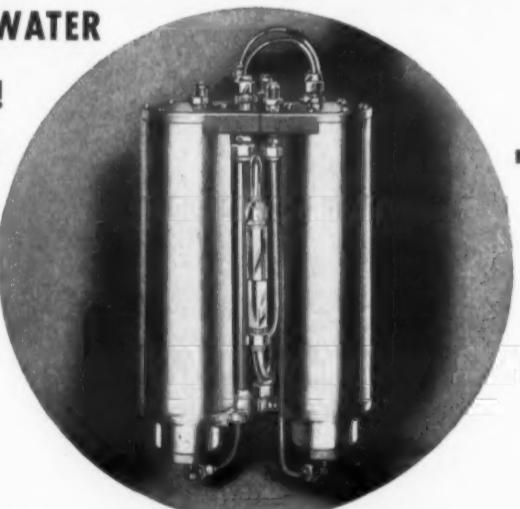
**MILLER RUBBER COMPANY, INC.**  
**AKRON, OHIO**

**Miller**

"Engineers in Rubber"

**We Honestly Believe . . .****THE PERFA-SODA CARBONATOR**

**IS THE FASTEST SELLING SODA WATER MAKER ON THE MARKET TODAY!**

**DEALERS ATTENTION!****CHECK THESE OUTSTANDING SALES FEATURES**

1. Automatic Operation . . . Perfa-Soda has no motors, no belts; needs no electric current.
2. Noiselessness . . . No hum, no buzz, no grind. Perfa-Soda runs silently and smoothly.
3. Foolproof performance . . . Perfa-Soda has only two moving parts; is fully guaranteed for one year.
4. Multiple Economies . . . Perfa-Soda is so compact it needs no floor space. Operates for fraction of ordinary costs; eliminates the usual servicing and replacement expense.
5. Low Cost . . . Low first cost, low operating cost spell bigger profit advantages.



**HUDSON MFG. COMPANY, INC.**  
4105 Cass Ave., Detroit, Michigan

WRITE IMMEDIATELY FOR ILLUSTRATED FOLDER

MAKERS OF THE NATIONALLY KNOWN PERFA-DRAFT AND PERFA-TEMP EQUIPMENT

## Two 330-Ton Compressors Provide Air Conditioning In U. S. Printing Annex

WASHINGTON, D. C.—Uncle Sam's employees in the new U. S. Government Printing Office here will work under ideal conditions this summer in the new annex building recently accepted by the government.

Cooling will be provided by two Carrier centrifugal compressors, each of 330-ton capacity, located in the basement of the eight-story building. In summer months, when cooling and dehumidifying are necessary, temperatures not exceeding 80° F. will be maintained when outside conditions do not exceed 95° F.

Relative humidity will be maintained at 55% at all times, regardless of outside temperatures up to 95° F.

Refrigeration has been provided for air conditioning the offset and tabulating card pressrooms, paper storage, and roller making departments on the second floor; job pressroom on the third; main pressroom on the fourth; and the Congressional Record and patents pressroom on the fifth floor.

## Paper Asks Conditioning For City Hall In Dallas

DALLAS, Tex.—Editorial support of a proposal to provide the city hall council rooms with air conditioning equipment has been given by the Dallas Times Herald, local afternoon daily. Commenting on the advantages to be gained from the purchase of a conditioning system, the newspaper said:

"If air conditioning improves the efficiency of a staff of workers, as it is said to do, it may prove economical, in the long run, to air condition the municipal building."

"The cost of this project would hardly be justified merely to make city employees more comfortable. After all, thousands of men and women who pay taxes, directly or indirectly, are without this convenience."

"But air conditioning of the municipal building would serve two purposes. It would not only make the structure more comfortable, but insulate it against outside noise, which is sometimes terrific."

"Operation of the air conditioning system, once it is installed, probably would be no more expensive than the hundreds of fans now in use, and elimination of the dust that blows in from open windows would preserve record books and furniture."

## Rusco Metal Awnings Made By Russell Co. of Cleveland

CLEVELAND—The "Rusco" line of Venetian all-metal awnings has been announced by F. C. Russell Co. here. The awnings consist of a series of metal vanes enameled in standard colors. They may be adjusted from inside the building.

Advantages claimed for the new awnings are that they do not obstruct vision or light, that they permit a free flow of air through the open window, that they are not subject to frequent replacement and repairs and do not have to be handled every season.

Rusco Venetian awnings are recommended for air conditioned buildings, as they are said to permit substantial savings on initial equipment and bring about a reduction in the cooling load.

## Bakers Told Advantages Of Retail Store Cooling

BUFFALO—The important part that air conditioning can play in the business of the retail baker was described by Walter P. Davis, executive secretary of the Air Conditioning Council of Western New York, before the annual convention of the New York State Association of Manufacturing Retail Bakers.

The retail baker must first sell himself on the advantages of air conditioning and then he will find out what benefit will come to his customers," Mr. Davis said. "After you get your customer in your store, air conditioning can play a mighty important part in keeping him there."

## New System Cuts Cost Of Conditioning Theater

BUFFALO—Cost of air conditioning the Century theater has been sharply reduced by the installation of a 150-ton "Freon" system, which replaces the carbon dioxide equipment placed in service 15 years ago. Evaporative condensers serve two Carrier 75-hp. compressors in operation of the \$50,000 system.

All equipment is located in a pilot house built for this purpose on the roof of the building. In summer months, when cooling and dehumidifying are necessary, temperatures not exceeding 80° F. will be maintained when outside conditions do not exceed 95° F.

Refrigeration has been provided for air conditioning the offset and tabulating card pressrooms, paper storage, and roller making departments on the second floor; job pressroom on the third; main pressroom on the fourth; and the Congressional Record and patents pressroom on the fifth floor.

## Orr Manages Advertising For Dorex Division

NEW YORK CITY—James E. Orr has been appointed advertising manager of the Dorex division, W. B. Conner Engineering Co. here. The company manufactures odor removers used in air conditioning.

## Store's Radio Broadcasts Feature Air Conditioning

BUFFALO—A series of 13 weekly radio broadcasts, built around the advantages of shopping in an air conditioned department store, will be inaugurated here soon by Sattler's Department Store.

The broadcast will be made each Thursday for a 15-minute period. It will feature Sattler's as the only completely air conditioned department store in Buffalo.

The slogan "Shop Only in Air Conditioned Stores for Comfort and Efficiency" will be used.

## Curtis System Installed In Arkansas Restaurant

JONESBORO, Ark.—The Princess Cafe here has just installed a Curtis air conditioning system, making it the first cafe with air conditioning in northeast Arkansas, according to George Metaxes, owner.

## Direct Mailing of 460,000 Promotion Pieces Brings Philco 'Better Than Average' Returns

PHILADELPHIA—Philco Corp. has completed its broad scale direct mail advertising campaign on portable air conditioning units, and Harry Boyd Brown, manager of the company's air conditioning sales, has reported a "far better than average" return.

"This return," he pointed out, "not only has created numerous new prospects for the company's air conditioning equipment, but also has revealed a keen interest in portable air conditioning among people with means to buy."

"Air conditioning," Mr. Brown declared, "has only scratched the surface of the greatest potential market in the history of American industry."

A total of more than 460,000 pieces of literature were used in this campaign, according to Mr. Brown's report. Heaviest barrage was directed at the professional fields, a

total of 340,000 promotion pieces going to this classification. The return from this group was far greater than from all others.

This direct mail invasion of the professional field was accompanied by full page advertisements in leading professional journals.

Nearly 25,000 pieces of literature were sent to hotels, hospitals, and tourist camps—nearly 5,000 to the latter classification alone. Stressed in the tourist camp letters was the fact that as many as 50 installations can be made in a single camp in one day.

## Mathes Room Coolers Added To Dallas Company's Stock

DALLAS, Tex.—W. A. Green Co., of Dallas, has added the Mathes washed air room cooler to its list of cooling equipment stocked.

# A TRUE FISH STORY

*on the profit  
in quick freezing!*



A FISH DEALER in Lansing, Michigan, saw a way to longer profits if he could buy lake fish in carload lots when the fish were plentiful and sell them later on when prices went higher. The problem was to keep the fish fresh until top prices could be got. Here's how he did it.

He installed a direct expansion system with Freon® refrigerants to quick-freeze the fish and thus keep them fresh indefinitely.

This system, which freezes with plates instead of with brine pipes, enables him to freeze the big fish sliced and the small fish whole. Temperature in the cabinet is held at -25° F., and in the plates at -35° F. He installed also a 30° F. storage room for the intake of fresh fish, and a -10° F. storage room for holding the frozen fish until they are sold.

This dealer has been able to pay for his refrigeration system in easy installments. He is making payments out of the money he saves by buying and selling at the best possible prices.

Fish dealers, produce men, and other handlers of perishable foods can profit handsomely by taking a tip from this Lansing fish dealer... and installing a quick-freezing storage plant with a refrigeration system using Freon® refrigerants.

### What makes a system using Freon® refrigerants so profitable?

#### IT'S HARMLESS!

Freon® refrigerants end any danger of heavy losses through spoiled meat, fruit, or vegetables, in the event of refrigerant leakage. (This makes a big hit with locker plant operators and patrons.)

#### IT FREEZES FASTER!

Direct expansion refrigeration makes the plate system of quick freezing the fastest economical freezing known. Foods in direct contact with the plate freeze faster than when they rest on pipes, which provide only a fraction of the cooling area.

#### IT ELIMINATES BRINE PIPES!

Plates take the place of the great lengths of brine pipe. The elimination of pipe cuts down expense and reduces dehydration of unwrapped foods.

#### SIMPLIFIED DEFROSTING!

Any frost that does form can be easily and quickly removed with a brush. This is important because

it ends the losses in efficiency caused by heavy frosting of pipes.

#### LOWERS OPERATING COSTS!

As noted, less frost means less expense. In addition, a system that uses brine adds to horsepower needs, often steps up power costs as much as 25%. And because of its compactness and fast freezing, the direct expansion system cuts down the size of the quick-freezing room and thus increases the space available for lockers.



# FREON

REG. U. S. PAT. OFF.

*safe refrigerants*

\*\*\*Freon® is Kinetic's reg. trade mark  
for its fluorine refrigerants.

## Salesmen For Thompson & Hamilton, Inc. Turn 50% of 'Lookers' Into Buyers

COLUMBUS, Ohio — Selling a large part of the store traffic is a prime factor in the success of Thompson & Hamilton, Inc., 118 East Broad St. Some of the firm's salesmen close an average of 80% of prospects they contact in the display rooms. The average is more than 50% among all the staff, which means that every other person who walks in the door goes out with a refrigerator, radio, or appliance, figuratively speaking.

Thompson-Hamilton is the largest refrigerator dealership in Columbus. As successor to Bard and Barger's retail division, the store has been selling General Electric major appliances ever since G-E introduced its first refrigerator back in 1927. It also sells Frigidaires; Zenith and Philco radios; Easy, Maytag, and ABC washers; and is distributor for the Bendix home laundry in 27 counties of central and southeastern Ohio.

Refrigerators get the heaviest play in both sales effort and advertising. The long, narrow showroom is lined on both sides with merchandise, and an additional row runs down the center. An average store display features 40 refrigerators, 30 radios, a dozen washers, seven electric and five gas ranges, in addition to a complete electric kitchen unit.

### STOCK VALUED AT \$15,000

Each type and each make are shown in a group. Some \$15,000 in stocks are always on hand for prompt delivery.

A staff of 16 trained salesmen work all the lines throughout Franklin county, with the exception of one home laundry specialist, who concentrates on Bendix. These men are selected not on appliance or even general sales experience, but wholly on the basis of character and personality.

The firm gets the best type of men, according to G. L. Thompson, because "we not only promise the salesmen a square deal, but we will lean over backward to see that they get it." Mr. Thompson is vice president and general manager of the company and, until recent

months, was also sales manager. Seven of his men have been with him from six to 14 years.

Every man on the staff receives extensive training and technical education. The new sales manager, H. F. Parcell, previously was director of sales training for Frigidaire. Half-hour sales meetings each morning keep the men abreast of developments and techniques. New men attend classes one night each week.

### PERSONAL CONTACT

First thing a salesman learns is to make friends with each prospect. The personal contact is a prime principle of the Thompson & Hamilton long-range public relations program, which has developed a following of thousands of central Ohioans for the company. The men are carefully schooled in selecting just the right unit for the individual buyer.

In this phase, the salesman actually follows the cues of the customer who, in most cases, picks out the best model he or she can sensibly afford.

Best prospects come from users, although excellent results are gotten from floor visitors. No cold canvass methods are practiced, sales effort outside the store being concentrated on the user and leads furnished by the user.

### INSTRUCTIONS TO USERS

Instructions in using appliances are given all purchasers in their own homes. The salesman does this work on refrigerator sales, while washers, ironers, and ranges are entrusted to the utility organizations. A full-time woman instructor offers instructions in the Bendix home laundry to Thompson & Hamilton customers and those of its dealers.

Two installation and service men are maintained to handle all calls during the regular guarantee periods. No service charges of any sort are made, and no outside service business is handled.

Six months after a sale is made, the salesman is again on the job to work the other appliances. This

follow-up work is pushed without letup until another sale is made. Repeat selling on the original appliance is pushed when the unit is ten to twelve years old.

Two greatest sales problems are competing with the fascination of the automobile for a place in the family budget, and trying to make the prospect understand and believe sales points. The average prospect is not frank in discussions with the salesman and has a tendency to withhold thoughts and comment, Mr. Thompson says, so that the sales efforts are often made in the dark. Training the men to create a friendship with the prospect has done much to overcome this handicap.

### AID OF MANUFACTURERS

Manufacturers are giving good background assistance with product, reputation, national advertising, and sales contests. Mr. Thompson says, but the actual sales job is still entirely the work of the dealer.

National copy, believes Mr. Thompson, is strictly prestige copy, to pave the way for a local follow-up. National advertising will sell the brand, give the public a confidence in the manufacturer's line, and arouse curiosity, but it will never make an actual sale of an appliance.

Thompson & Hamilton's own advertising campaign is concentrated in the three local dailies, and insertions are tailored to meet the needs of the firm's territory. Advertisements are carefully designed with the purpose of creating actual sales with a cooperative budget of \$8,000 annually.

Brands are featured in rotation, and in direct proportion to their respective sales volume. Factory recommendations are followed and the mats made up into Thompson & Hamilton's own individualized layouts. These are built around price and terms, with "no down payment" stressed to meet competition. Firm name and address is used in reverse at both top and bottom of all insertions. This feature was adopted this year to give institutional value to regular daily copy.

The line, "Columbus' Largest Refrigerator Dealer," appears at the bottom of all newspaper advertisements.

### 'BANK PLAN' FEATURED

The "Bank Plan" idea is featured in advertising, tied in with the "15 cents per day" terms. The 6-cu. ft. models are nearly always featured because of their wide appeal.

New advertisements are run a few times for testing. If they get results they are repeated; if not they are revised. This system of test insertions adds greatly to the total results of the campaigns. That they do get results is attested by the average of 250 to 300 good prospects a month attributed directly to the newspaper insertions.

No radio, very little direct mail, and almost no outdoor media are used. The one piece of direct-mail adopted is an eight-page folder entitled "Protecting the Health of Baby and Mother," telling the story of the Bendix home laundry. This piece goes to young mothers about ten days after a birth, or just about the time she and the baby are arriving home from the hospital. Lists are secured from the "vital statistics" columns of the newspapers.

The company's used appliance showroom, established on the lower level, is a 14 x 50-foot room which doubles as a sales meeting room for Bendix dealers. Some sixty units are displayed.

## Beauty Shop Survey Shows Conditioning Is Being 'Bought' Rather Than 'Sold'

CHICAGO—Further proof that air conditioning is being "bought" rather than "sold" is revealed in a survey of air conditioned beauty shops recently completed by Edward A. Field here. Two out of every three owners reported that when they were ready to buy, several firms were consulted for layouts and prices.

Out of the beauty shops interviewed, Mr. Field found that three phoned the local public utility for the names of dealers, seven consulted business directories for dealers' names, and four dealt with salesmen who established personal contact.

The survey disclosed that in a majority of cases the reason for purchase was the "general urge to be progressive." Competition from other air conditioned shops has had no appreciable effect up to the present time.

In the matter of operating expense, all shops reported that no misrepresentation had been made by the firm installing the equipment. In only one instance were service costs reported as excessive.

While beauty operators expressed a unanimous belief that having air

conditioning increases revenue, it was generally admitted that the expense of doing business is also increased. The majority of owners were entirely satisfied with the additional expense because they had found air conditioning is demanded by the public.

One beauty shop proprietor said, "More of 'em come in, they come in oftener, and they spend more."

When asked if her customers liked the air conditioning, one owner said, "Yes, they do. But I bought it for myself. I was the one who needed the comfort and I would go out of business before I would give it up."

Best market for air conditioning in beauty shops was found by Mr. Field to be in middle class neighborhoods. The low income sections were second on the list and the wealthy sections run a poor last.

Mr. Field observed that many shops could be cooled more economically if they occupied a smaller area. They are sprawled out just because the rented space happened to be large.

Answers to the following questions reveal the current attitude of 19 Chicago owners of air conditioned beauty shops:

Question	Yes	No
Do customers like your shop better since it has been air conditioned?	18	
Does air conditioning attract new customers?	18	1
Can you sell more service in a cooled store?	12	5
Are there fewer cancellations of appointments?	12	4
Do customers come in more often?	12	4
Do operators like air conditioning in your shop?	17	2
Does air conditioning pay for itself in new business?	6	11
Would you try to run a shop without air conditioning?	4	13

## N. Y. Sales of 'Bargain Packages' Hit 113,000

## Worthington Plans Addition To Compressor Factory

BUFFALO — More than 113,000 "bargain packages" containing a vacuum cleaner, lamp, and iron have been sold since the start of this cooperative merchandising drive being sponsored by Consolidated Edison Co., according to a mid-June report made by E. F. Jeffe, vice president of the utility, at a luncheon for dealers and their representatives. The campaign is to close June 30.

Grand total of \$321,454 has been distributed so far to participating dealers as their bonuses for sales under the utility's pool arrangement, it was reported. Following this announcement, the dealers and manufacturers' representatives attending the meeting agreed to contribute \$3,500 to the American Red Cross.

The Buffalo plant has been manufacturing compressors for air conditioning equipment and other uses.

## Cutler-Hammer Moves Branch Office in Pittsburgh

PITTSBURGH — Local office of Cutler-Hammer, Inc., Milwaukee manufacturer of electrical controls, has been moved to new and larger quarters in the Park building, 355 Fifth Ave. T. S. Towle is district manager.

ALL SIZES

DID YOU SAY Copper TUBING?

PENN BRASS & COPPER CO., INC.  
ERIE, PA. U.S.A.

Gale

COMPRESSORS AND CONDENSING UNITS

For real performance sell Gale commercial compressors and condensing units—PROVEN PRODUCTS, PRECISION BUILT! Sizes from 1/8 H.P. to 1/2 H.P. for all applications. Write for catalog and specifications.

GALESBURG, ILLINOIS

Division of Outboard, Marine & Manufacturing Co. In Canada, GALE Products, Peterboro, Ontario

## Meet the Demand in this Expanding Market

Today, the job of conquering heat is just as important as means for producing it. The Weather Bureau's "cold wave" flag is an appropriate emblem for those engaged in this important work. The GR line of "packaged" Air Conditioning and Lipman Automatic Refrigeration Equipment offers a broad opportunity for profitable selling in a field whose potential possibilities are just beginning to be realized. The line is complete. It has a record of more than twenty years' service satisfaction behind it. It is nationally advertised. It costs you nothing to investigate. Why not do it today? Without obligation, write for detailed information.

GENERAL REFRIGERATION CORPORATION  
Dept. AC2-640, Beloit, Wis.

Self-Contained Unit Store Coolers . . . 3 Sizes

Air-and Water-Cooled Refrigeration Machines . . . Ammonia, Methyl Chloride, Freon-12 types.

Lipman AUTOMATIC REFRIGERATION CONQUERS HEAT

WASHI collections ATORS tota mpt of \$1,163,257

**Will Sell To Farms**

GEORGE MULLIN

**New G-E Department To Push Rural Sales**

(Concluded from Page 1, Column 3) tively the appliance and the construction materials divisions.

A rural electrification section has been in existence since 1923 at G-E's Schenectady headquarters as part of the central station department, concerning itself with promoting the sales of transformers, meters, motors, soil heating cable, and other apparatus products. Mr. Mullin was a member of that section for the past four years, and more recently was associated with the electrical traveling exposition which toured the country under the sponsorship of the R.E.A.

He is a graduate of Purdue university, of the G-E courses in student engineering, sales training, and business training, and did post-graduate work in Butler university's school of business administration. From 1928 to 1936 he was a G-E apparatus salesman at Indianapolis.

**Weissinger In Crosley Advertising Department**

CINCINNATI—F. H. Weissinger has joined the advertising department of Crosley Corp. to handle cooperative advertising.

Mr. Weissinger, who comes to Crosley from Central Outdoor Advertising Co. here, formerly was with Campbell-Ewald Co., Detroit, contacting newspapers, outdoor advertising companies, and radio stations in the interests of the cooperative advertising of that agency's clients.

**New Plastics Company Formed In Michigan**

DEXTER, Mich.—Michigan Molded Plastics, Inc. has completed construction of a modern concrete, steel, and glass plant here for production of all types of plastic materials by compression, injection, and extrusion molding.

Manufacturing operations already have started on a small scale, and the plant is in a position to supply all types of plastics required in the manufacture of refrigerators, radios, ranges, and other appliances, as well as in the making of automobiles, photographic equipment, hardware, and novelty items, officials of the company claim.

The corporation was organized last March by a group of men experienced in the plastics industry, having been associated with a plastics molding plant formerly located in Jackson, Mich.

President of Michigan Molded Plastics is J. E. Libbey of Detroit. Other officers, all of Jackson, are: general manager, J. G. Rossiter; vice president and treasurer, L. W. Seybold; secretary, H. S. Reynolds. I. H. Whitman is plant superintendent.

**Refrigerator Tax Shows Small Increase In May**

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators totaled \$1,334,262.63 for the month of May, an increase over the \$1,163,257 collected in May, 1939.

**Refrigerators Lead in Knoxville Sales**

(Concluded from Page 1, Column 5) unit price of refrigerators sold here in May was \$145.

In the commercial equipment field,

three air conditioning units were sold at an average price of \$867 for a total dollar volume of \$2,600; eight commercial refrigeration units were sold at an average price of \$577 for a total dollar volume of \$4,614.

A complete tabulation of Knoxville's major appliance sales for the month of May follows:

Appliance	No. of Units	Average Price	Total Value
Refrigerators	555	\$145	\$80,397
Ranges	249	146	36,382
Water Heaters	145	80	11,594
Washers	254	79	19,952
Ironers	18	77	1,390
Vacuum Cleaners	156	68	10,668
Radios	425	34	14,363
Dishwashers	1	150	150

**Thermometer Sets Given With Ranges, Heaters**

MADISON, Wis.—A thermometer set valued at \$2 is being offered by Wisconsin Power & Light Co. in cooperation with appliance dealers in its territory to any persons either buying an electric range or water heater by July 25 or turning in the name of a prospect for one of these appliances who is sold before the closing date.

Prospect suggestions must be submitted on coupons appearing in newspaper advertising or secured from participating dealers.

**Chicago Cooling Sales Ahead of Last Year**

(Concluded from Page 1, Column 4) divided as follows: 18 doctors and dentists; 47 offices, 36 residences, 17 miscellaneous. Central systems:

Bowling Alley	1
Funeral Homes	5
Offices	7
Restaurants	25
Clothing Stores	3
Drug Stores	11
Food Stores	3
Fur Stores	3
Theaters	2
Shoe Stores	2
Jewelry Store	1

**MAN! IT'S A KNOCKOUT  
—BUT THE PRICE WON'T  
HIT YOU HARD!**



Seam welding assures water-tight construction

Removable top section and end panel provide easy accessibility to all internal parts

Belts readily adjustable by special two-way motor adjustment

BWS SERIES WATER SAVER

# A NEW LOW-COST WATER SAVER BY PEERLESS

A BIG-TIMER...7½ to 50 tons! Engineered down to minimum space and up to maximum efficiency. The new Peerless BWS Water Saver utilizes the principle of evaporation to cool more refrigerant with less water than ever before possible!

The cost? So modest you'd never believe such obvious superiority could be produced for so little money. Ingenious, utterly different designing did it—reduced everything to utmost simplicity, yet created a new high in efficiency.

Look at these features . . . try to match them . . . anywhere!

The seam welded, galvannealed casing is absolutely water-tight—the whole unit husky as a dock wallop. Water from full cone sprays is blasted against every inch of a V-shaped, two row Thermek con-

denser instead of merely trickling through a deep bank of coils as in the conventional unit. This new-type construction works every pound of water overtime—accounts for the amazingly small amount required.

Double inlets assure more uniform air distribution . . . bronze and ball bearings . . . two-way adjustable belt drive . . . balanced-impeller pump . . . special construction which makes internal parts easily accessible . . . smaller models go through any doorway . . . special weather-proof housing for outdoor installation.

In all, twenty-five separate and distinct star features . . . space here won't permit full description. So get the facts—don't wait another day. This is surely the unit to save money for your customers and make money for you!

## TURN OVER A NEW LEAF... GET THAT BIG UNTOUCHED MASS MARKET WITH THE PEERLESS LWS SERIES WATER SAVER

You're missing the boat! Losing out on a clean-up . . . if you aren't tapping today's limitless market for small water savers. Thousands of smaller refrigerating plants need 'em . . . to cut operating costs . . . to protect against frequent water shortages.

Peerless LWS Water Savers are made to order to get this waiting business! Not an expense, but an investment, because they pay for themselves in short order. Each pound of water vaporized in one of these units absorbs over 1,000 BTU, while a water-cooled compressor absorbs only 20 to 25 BTU. Hence they cut water cost by as much as 90%. Cut power consumption, too, because they reduce normal condensing temperatures.

What a selling story! We'll gamble you can think of dozens of places where this unit can be easily sold. Put on the big push in July—let Peerless Water Savers make it a boom month!

ASK YOUR REFRIGERATION PARTS JOBBER



Do you receive the "Peerless X-Changer"? We'll be glad to put you on the mailing list.

# PEERLESS OF AMERICA INC.

Midwest Factory, General Offices—515 W. 35th Street, Chicago

NEW YORK FACTORY  
43-20 34th Street  
Long Island City

PACIFIC COAST FACTORY  
3000 South Main St.  
Los Angeles, Calif.

SOUTHWEST FACTORY  
2218 N. Harwood St.  
Dallas, Texas

EXPORT DIVISION  
P. O. Box 636  
Detroit, Mich.

## Refrigeration Service In Household Budget Book

ST. LOUIS—To help educate women to the idea that refrigeration service is an essential factor in good housekeeping, and to place its own name in the most fertile position in the customer's mind, Franklin Refrigeration Service Co. has been issuing a household budget book to every one of its service customers.

In this book, all ordinary household expenses are listed off in blank form.

A special section is reserved for refrigeration repairs and adjustments, however, and the company's name and telephone number are prominently included in this space.

### Drawing on Refrigerator Door Lures Rose Festival Crowds To Oregon Department Store

PORTLAND, Ore.—A rough, bold sketch of an Oregon landscape, done with a black china-marking pencil on the door of a Frigidaire refrigerator, was used by the Meier & Frank department store here to stop a goodly portion of the traffic that flowed through the store during Portland's Rose Festival week.

A tiny red and black drawing at the upper left-hand corner of the refrigerator bore the caption "Greaseproof."

The refrigerator was placed near one of the store's main floor entrances.



Harold C. Caspers (left), city sales manager, and Robert Stevenson, vice president of Rex Cole, Inc., General Electric distributor in the New York area, inspect some of the old iceboxes traded in at \$5 each during the early stages of Consolidated Edison Co.'s current drive.

### 10,000 Frigidaire Prospects Lined Up In Week With Displays, Cards, Buttons, Cooking Shows

ST. LOUIS—Stix-Baer-Fuller department store, which took on the Frigidaire line early this year, claims to have added more than 10,000 prospects to its lists during the "Frigidaire Week" which it sponsored recently.

For this store-wide sales event, R. G. DeHart, electrical appliance merchandise manager, was given the largest appropriation ever allotted by the store for appliance promotion.

Two windows were filled with various models of Frigidaire refrigerators, and another window was devoted to other appliances. Action displays, elevator cards, lapel buttons for clerks, direct mail pieces, and daily cooking demonstrations all played a part in this promotion.

In addition, the store's entire personnel was given instructions to suggest to all customers that they visit the store's fifth floor appliance department.

## Halle Says Small Family Needs Big Refrigerator More Than Big Family; Cites Wives' Regrets

COLORADO SPRINGS, Colo.—A small family really needs a big refrigerator more than a large family does. This paradoxical statement is used by Simon Halle, manager of Halle's Majestic Electric Co., as a basis for "selling up" in size.

"Selling a large refrigerator to the head of a big family seldom constitutes a problem," Mr. Halle points out, "because this type of buyer just takes it for granted that he'll need a bigger box."

"But by the same line of reasoning, the head of a small family thinks he needs only a small refrigerator, whereas actually he has greater need for a larger refrigerator than does the big-family man."

To small-family prospects who fail to see the light, Mr. Halle explains that "in a family of only two or three people the amount of food consumed at any one meal is so

small that there are nearly always a lot of left-overs which, if properly preserved, can be used to advantage for some other meal.

"Furthermore," he continues, "the amounts of food actually prepared for a meal are smaller in the smaller family. Yet, in order to buy most advantageously, the housewife in the small family must purchase in nearly as large quantities as the wife in the larger household."

"All of this," concludes Mr. Halle, "adds up to just one thing—the need for a good-sized refrigerator."

If the prospect remains recalcitrant after this build-up, Mr. Halle cites specific instances in which wives in small families have purchased small refrigerators, soon regretted their decision, and turned them in on larger boxes. He simply refers the new prospect to these women for advice.

### Customers Buy Second Appliance After Paying 25% on First Bill; Daily Cooking Featured

PORTRUSH, Va.—Step-by-step selling plan of M. M. Crockett Co., Westinghouse dealer here, allows customers to start an account in a second appliance after having gained a 25% equity in the first. These liberal credit terms are extended only when the customer's credit has been established as good.

The progressive selling plan results from the firm's policy of "perpetual contact" with its customers. All names are kept on file, and it is claimed that 70% of the customers contacted have bought some item previously.

Important part of the contact plan is the store's full-time home economist, Lynda Bailey, who maintains headquarters in the complete electric kitchen in the appliance department. Her main job is to promote electric cooking, and to this end she conducts daily floor demonstrations and arranges one cooking school a week in the store.

Leading up to her cooking demonstrations, Miss Bailey does a full-

line job of appliance demonstration, pointing out the advantages of water heaters, ironers, and refrigerators. Believing that the woman is interested "in the results of the appliance," she points her demonstrations with actual cooking, and brings out the use of the refrigerator in preparing salads, ice cream, and ices.

The weekly cooking schools are limited to 25 "students," so that each person attending can be given personal attention. Miss Bailey keeps in close touch with the leaders of various ladies' clubs and organizations, and contacts them in the evening by phone from her own home. These leaders select the members that will attend the cooking school.

It has been found that this method brings in a class of prospects who are interested in the results of electrical appliances, and Miss Bailey's before-their-eyes demonstrations of these results have played a large part in increasing sales, it is said.

### 506 Refrigerators, 66 Ranges Sold During Drive As Salesmen Vie For 'Jackpot' & Mystery Trip

PITTSFIELD, Mass.—The "Heart-O-Gold" spring refrigerator campaign staged by Pittsfield Electric Co. during March and April resulted in sales of 506 refrigerators and 66 ranges during the dealer cooperative drive. Refrigerator sales during the campaign were up 40% over those sold in the 1939 effort.

"Heart-O-Gold" in the campaign was a tab board. For every two refrigerators sold during the campaign, the salesman got one pull from the board. The number on the tab entitled the salesman to a prize with a value ranging from \$2 to \$15. Holder of the lucky number on the board pulled the tab worth \$25.

The salesmen were divided into two teams. Lineup was based on past accomplishments, recent improvements, or let-downs. Sparking the drive of the two teams was a "jack-pot" of cash to be split among the salesmen of the teams. Pittsfield Electric Co. started off the jack-pot with a kitty of \$50. For each refrigerator sold the utility added 25 cents. For each range sold 50 cents was added.

Members of the winning team collected 60% of this kitty, and the members of the losing team got 40%. A salesman was required to sell at

least one range and four refrigerators to be in on the pay-off.

As an added incentive to range sales, a one-day "mystery trip" was offered to salesmen selling two ranges in addition to the one needed to share in the jack-pot. Regular bonus offer on range sales was paid by the utility during the campaign.

The "mystery trip" was to the General Electric Co.'s television transmitter, plus an inspection trip of the WGY transmitter in South Schenectady. Dinner was served at the Van Curler hotel in Schenectady, which was followed by a visit to the new General Electric broadcasting studios. The trip was earned by 16 salesmen.

### Postcard Requests 'Ask the Woman Who Owns One'

SHEBOYGAN, Wis.—The Muller Service Co., 615 N. Eighth St., recently featured a Westinghouse refrigerator window, the background of which was a large placard bearing the names of satisfied local users and captioned, "Ask The Woman Who Owns One."

## FOR Better Coolers

New catalog shows our improved line of Direct Draws, Dry Kool Beverage Coolers, Bottle Coolers, Walk-In Coolers and other refrigeration equipment. Dealers and distributors write to Desk 40 for catalog and particulars.

UNITED REFRIGERATOR MFG., INC.  
1280 UNIVERSITY AVENUE  
ST. PAUL, MINNESOTA



## Mr. Refrigerator Manufacturer:



★ Are you looking for a maker of

## STAINLESS STEEL SHELVES

for your 1941 line of Refrigerators?

★ Then—for ECONOMY—  
SPEED OF DELIVERY—  
SUPERIOR QUALITY and  
JEWEL-LIKE BEAUTY Contact  
WALL WIRE PRODUCTS CO.



Shelves in

STAINLESS STEEL  
of Permanent Jewel-Like Beauty

WALL WIRE PRODUCTS COMPANY

948 GENERAL DRIVE • PLYMOUTH, MICH.

## Dealers, Contractors View Displays and Talk Conditioning

WICHITA, Kan.—Four states—Kansas, Nebraska, Oklahoma, and Missouri—were represented by the attendance at the annual party and meeting of American Electric Co., wholesaler here.

Some 600 dealers and contractors were present. Air conditioning seemed to be the principal topic of discussion. Product displays attracted considerable interest. Entertainment was furnished.

Officials of the company attending from St. Joseph, Mo. included L. E. Reid, president; S. W. Beale, credit manager; and Richard Brownlee, secretary.

A. L. Goodman and W. C. Adamek, manager and assistant manager, respectively, of the host firm, were in charge of arrangements for the gathering.

## 'Outstanding Salesman' Given Philco Diamond

LITTLE ROCK, Ark.—J. H. Hunt, manager of Bush-Caldwell Co., Philco distributor in this area, was presented with a diamond pin as the "outstanding Philco salesman in the United States" when Philco held its annual convention in Chicago.

Thomas A. Kennally, Philco general sales manager, made the presentation.

Mr. Hunt has been selling and promoting Philco products here for the past 10 years. The company for which he now works has 125 dealers in its Little Rock sales division, and 80 dealers served by a branch opened early this year at Fort Smith.

## Kelvinator Executives Speak In Boston

BOSTON—More than 500 Kelvinator dealers and salesmen from Massachusetts, Maine, Rhode Island, and New Hampshire met June 14 at Hotel Somerset to hear a presentation of the Kelvinator summer sales program. Alan Steinert, president of Eastern Co., Kelvinator distributor in Massachusetts, presided.

Principal speaker was Frank R. Pierce, Kelvinator general sales manager. Other speakers were Walter Jeffries, assistant to the sales manager of household appliances, and Edward Barnes, Kelvinator district manager for New England.

Mr. Pierce reported that Kelvinator sales to New England so far this year were 135% ahead of sales for the same period last year, and that the bulk of the sales now being made in the lower income brackets have resulted from effective advertising in local newspapers.

Among distributors present were Ed Norton, vice president of Manchester Coal & Ice Co., and R. U. Lynch, president of Post & Lester Co., Rhode Island.

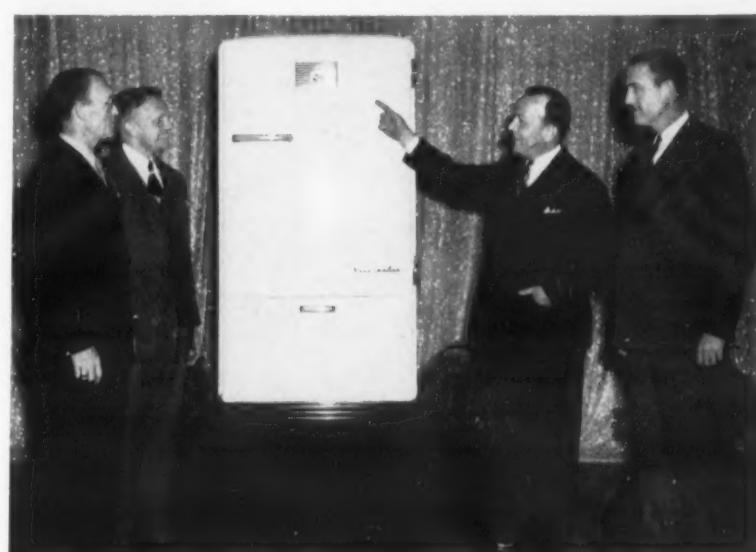
## From $\frac{1}{4}$ to 25 TONS of refrigeration

Brunner Refrigerating and Air Conditioning equipment comprises air and water cooled condensing units for practically all types of commercial applications up to and including 25 tons of refrigeration... Catalog promptly on request. Brunner Manufacturing Co., Utica, N.Y., U.S.A.



FOR YEARS THE SYMBOL OF QUALITY

## Kelvinator Officials At Duke Parley



The annual sales meeting of the Duke Power Co. brought Frank R. Pierce, Kelvinator's general sales manager, to Charlotte to talk to the salesmen of this key Kelvinator outlet in the South. Shown with Mr. Pierce are George Wagoner, district man-

ager; Roy Palmer, Duke Power Co. official; and T. A. Farrell, Kelvinator's eastern sales manager.

## Market Out of Slump in Southwest, Texan Claims; Good Year In Prospect

DALLAS, Tex.—Discussions with several hundred retail dealers in the cities of Tulsa and Oklahoma City, Okla., Dallas, Tex., and Shreveport, La., have convinced Miles Ditmer, sales promotion manager for Kelvinator in the Dallas zone, that the buying market has emerged from the slough of uncertainty and slump into which it toppled with the outbreak of "total war" in Europe, and that one of the best years in record now is in prospect.

Mr. Ditmer engaged in a swing over the territory encompassed in his zone, which includes: Tulsa, Oklahoma City, Dallas, Shreveport, San Antonio, Corpus Christi, and Brownsville, Tex. First meeting was in Tulsa on June 3, and the last was on June 14, in Brownsville.

In each city Mr. Ditmer met with dealers of that area and discussed

the summer season selling program.

Mr. Ditmer declared that his conversations with dealers in the Oklahoma cities, in Shreveport, and in Dallas made clear that the market had definitely emerged from the doldrums into which it had fallen after the spurt of pre-season selling. This slump was in the main attributed by him to the jitters resultant from the outbreak of fighting in Europe with the invasions of Scandinavia and the Low Countries.

"In Shreveport, for instance," Mr. Ditmer related, "some of our dealers—not all of them by any means, understand—now report average daily sales of five machines. All over the zone we have thus far traversed the story is much the same: Business is definitely and materially picking up, and there is every reason to look for a year which will equal at least the marks set in the pre-season selling period."

Three Shreveport dealers, Mr. Ditmer reported, have attained daily average sales of five machines. These: New York Furniture Co., Roby Furniture Co., and Southwest Gas & Electric Co.

**Dealers Expand as Business Goes Up**

**McGREGOR'S ADDS SPACE**

MEMPHIS, Tenn.—Through addition of an adjoining building, McGregor's, Inc., Frigidaire distributor in five mid-south states, has enlarged its quarters here. The new building has an area of 12,000 sq. ft., according to John M. McGregor, president of the firm.

Increased business was given as the reason for the company's expansion. Said Mr. McGregor, "Our business to date in 1940 is twice as big as it was for the same period last year."

**FISHER OPENS BIGGER STORE**

COLUMBUS, Ohio—Fisher Appliance Shop has moved from 495 N. High St. to new and larger quarters in the downtown shopping area at 107 E. Long St. New location provides extensive window display space, and will allow an enlargement of service facilities. The shop handles Norge, Gibson, and Stewart-Warner refrigerators. H. J. Fisher is owner and general manager.

**LAW DOUBLES FLOOR SPACE**

DALLAS, Tex.—Floor space and display facilities of Warren Law, Westinghouse dealer in downtown Dallas, have been practically doubled by virtue of the merger of the Will A. Watkin Co., piano dealership which formerly shared quarters with the Law firm, with another local piano concern.

Under his new setup, Mr. Law plans to feature all types of major appliances, with especial emphasis on refrigeration and unit cooler equipment, and to maintain a complete electric kitchen display.

**VIM LEASES NEW STORE**

NEW YORK CITY—Vim Electric Co., Inc., has leased a store at 16-20 Fordham road, corner of Walton Ave., the Bronx. The Vim chain operates 30 stores dealing in refrigerators, radio equipment, etc.

**KOBSA TRIPLES FLOOR SPACE**

BALTIMORE—Kobsa Refrigerator & Radio Co. here is completing a \$10,000 addition to its store which will triple the floor space, providing larger sales and showrooms. The firm features Frigidaire, Westinghouse, and General Electric refrigerators. Oscar G. Kobsa is owner.

**DOUBLE DISPLAY SPACE**

JEFFERSON CITY, Mo.—Sullivan Electrical Service, Frigidaire dealership owned and managed by Larry Sullivan, has doubled its former display space by moving.

**OPEN NEW ANNEX**

CHATTANOOGA, Tenn.—To facilitate handling of its increased business, Tennessee Valley Electric Co. has opened an annex at 603 Cherry St. in connection with its main store at 18 E. 6th St., according to Sidney Marks, president of the company.

*A NEW SLANT  
on Ice Cubes  
in a hurry!*

## THE INLAND TILT OUT ICE TRAY

Here's a brand-new slant on a moderately priced ice tray for refrigerator manufacturers, jobbers and dealers. It's the new Inland Magic Finish Tilt Out Tray which combines fast freezing with a quick release of full sized ice cubes in units of two at a time or a trayful.

A slight downward pull on the tray lifter releases the tray from the evaporator. Then quickly and easily, the handy Cube Release Lever is used as illustrated below to give two cubes or a trayful from either the single Tilt Out Tray or double duty Dessert Tray. No fuss! No bother! No shattered ice cubes.

One important feature of the Tilt Out Tray is that it is easily operated by a can opener, screwdriver, or any of the many tools available in the pantry. The Cube Release Lever is convenient but not necessary to its operation.

This new Inland Magic Finish Tilt Out Tray is first choice as low cost original factory equipment by leading makers as well as for replacement sales by dealers. For details, prices and discounts, write to

**INLAND MANUFACTURING DIVISION  
GENERAL MOTORS CORPORATION  
DAYTON, OHIO CLARK, NEW JERSEY**

*For Two Cubes*

As illustrated, it is easy to use the Cube Release Lever and get two or more full sized, unshattered ice cubes from the Tilt Out Tray.

*For a Trayful*

After cubes are loosened the grid is lifted vertically and cubes fall into the single tray—or the Dessert tray as shown.

**INLAND**

**MANUFACTURING**

**Rubber, Plastics  
and Metals**

## What Research Has Shown About Humidity and Noses, Sprinkling Of Roofs, Dirt From Conditioning System, and Clerks' Comfort

**Editor's Note:** The following are resumes of the principal papers given during the mid-year convention of the American Society of Heating & Ventilating Engineers held last week in Washington, D. C. Information is given as to the conclusions reached by the authors, particularly as they may be pertinent or useful to the man in the field.

### Don't Cause Drastic Changes In Humidity, Engineers Are Told

WASHINGTON, D. C.—The human nose is a very effective air conditioning device, in the opinion of Lauren E. Seeley of Yale University, who spoke before the summer meeting of the American Society of Heating & Ventilating Engineers here.

By taking temperature and humidity readings at several points in the nasal cavity, Mr. Seeley discovered that air expired from the lungs is not saturated, or nearly so, as physiologists have believed, but that the burden of adjustment to changes in atmospheric conditions depends upon the mucous membranes of the nose.

Entitled "Study of Changes in the Temperature and Water Vapor Content of Respired Air in the Nasal Cavity," Mr. Seeley's paper throws more light on the controversial subject of the actual effect of relative humidity on physiological reactions in the human body.

Finding that "sudden alteration of moisture loss is undesirable" (in the nasal cavity), Mr. Seeley believes "it follows that air conditioning ought to be governed to avoid drastic changes (in relative humidity)." For moderately cold weather, relative humidities of between 40 and 50% are recommended by Mr. Seeley, who considers that his findings present good reasons for substantiating "what everybody knows already."

In the case of summer cooling, Mr. Seeley said, "the nature of the climate should decide the character of the cooling. If the climate is hot and dry, the method of cooling should provide a dry indoor atmosphere. If warm and humid, then rather moist air would be better. These observations are based on the premise that drastic changes in moisture loss from the nasal cavity must be avoided where the change in environment is sudden."

In conclusion, Mr. Seeley asserts that "no one today denies the importance of maintaining a complete and normal mucous lining in the respiratory tract." The way to accomplish this, Mr. Seeley explains, is to avoid drastic changes in rela-

tive humidity, between outdoors and indoors, in the design of an air conditioning system.

Mr. Seeley points out that the nose acts as a miniature air conditioning device, in restoring the correct humidity balance in the nasal cavity, but if too much strain is placed on this function, the "loss of germicidal protection in the presence of infectious organisms may result before the body accommodates itself to the new requirements." Relative humidities in air conditioning must be regulated so that the nasal cavity does not have to compensate for extreme atmospheric conditions.

### Roof Sprinkling Better Than Standing Water In Cutting Heat Load

Because water standing on a flat roof has a tendency to absorb radiant heat from the sun and hold it, thus steadily increasing the temperature of the water itself, F. C. Houghten, A.S.H.V.E. research director, concluded that a sprinkled roof, where water is permitted to evaporate, or 1 inch of water is superior to 6 inches of water in aiding the operation of a summer air conditioning system.

In a paper, "Summer Cooling Load as Affected by Heat Gain Through Dry, Sprinkled, and Water Covered Roofs," Mr. Houghten asserted that

"the effect of water in either the case of the sprinkled or the flooded roof is to greatly reduce the rate of heat flow from that found in the same panels in dry condition. Of greater interest however, is the effect of the water to absorb a large part of the radiant heat, to retain it with a uniform temperature throughout the water depth, and to dissipate it back to the air through the latent heat of evaporation."

In the case of a roof panel flooded 6 inches deep, Mr. Houghten found that "the 6-inch depth of water serves to reduce the rate of heat flow through the panel during the early part of the day, and to effect a somewhat greater rate of heat flow thereafter.... The 1 inch of water, having a lower heat capacity, warms up more rapidly, gives a higher maximum rate of heat flow earlier in the day than is the case for the 6-inch flooded roof."

Curves worked out by Mr. Houghten show that at 3 p.m. on Aug. 1 of a typical summer, various types of roof with and without water had the following heat flow in B.t.u. per square foot, per hour:

2-inch concrete, smooth asphalt..	18
2-inch concrete, dry slag.....	12
2-inch plank, dry slag.....	10
2-inch concrete, 1 inch of water..	5
2-inch plank, 1 inch of water....	3
2-inch concrete, 6 inches water..	2
2-inch plank, 6 inches water....	1
2-inch concrete, sprinkled.....	2
2-inch plank sprinkled.....	0

The studies also found that black roofs absorb more heat and have a higher heat gain than those painted with aluminum, or coated with light colored materials.

### People Can Stand Dirt on Walls, If Not 'Patterned'

"People will have no objection to a large amount of dirt if it is deposited uniformly, while the same amount of dirt in lath patterns is very noticeable," declared R. A. Nielson of the Westinghouse Research Laboratories, in a study of "Dirt Patterns on Walls." Thus the air conditioning engineer should avoid placing grille outlets where they cause "streaking" and create decided patterns on wall surfaces.

"Regardless of what method may be responsible for depositing dirt on walls," Mr. Nielson said, "that deposit can be minimized by reducing the dirt content of the air." For this purpose air cleaners of high efficiency are recommended by Mr. Nielson.

To show the importance of temperature gradients in the deposit of dirt on walls, Mr. Nielson uses the familiar patterned walls near radiators and warm air registers.

"Above the radiator the wall is generally dark," Mr. Nielson states, "especially is it noticeable just at the top of the radiator where light and dark vertical patterns show the path taken by air currents. The section of wall actually behind the radiator (excepting the top couple of inches) is really clean, since it is heated with radiant energy to a temperature above that of the passing air. Convective and diffusive forces tend to deposit dirt on the wall but there the temperature gradients are large enough to repel all dirt and the wall remains clean.

"Above a supply register the case is similar to that of the radiator. The heated air is carried close to the wall and the temperature gradient is sufficient to cause precipitation of some dirt. If a hood, or baffle, is placed over the top of the radiator, it is found that the wall above the radiator is cleaner because the warm air has been deflected away from the wall and the cooler air has replaced it."

Mr. Nielson also pointed out that the "inside surfaces of windows become dirty in a rather short time, even if they are kept well above the dewpoint." He concludes that "of the various methods by which it is possible to produce striated dirt deposits on walls, it appears that thermal gradients are responsible for the majority of those that are formed in homes during the heating season."

### Same Optimum Conditions Should Hold All Summer

Most people are comfortable at 70° effective temperature, according to W. J. McConnell of the Metropolitan Life Insurance Co., who spoke on "Reactions of 745 Clerks

to Summer Air Conditioning." For the guidance of owners of air conditioning systems, Mr. McConnell explained that 70° E. T. means 76° F. with a 40% relative humidity or 74° F. with a 60% relative humidity.

The report also pointed out that men prefer an indoor temperature slightly below that found to be satisfactory for women. (The reason for this observation is that men wear heavier clothing when indoors.)

It was also discovered that optimum temperatures necessary for comfort may be carried 1° higher in the morning than in the afternoon. Mr. McConnell also concluded from the study that indoor temperatures found to be satisfactory during summer months show slight variation from one month to another, and that if 70° E. T. represents comfort in June, it will also provide comfort in September. He stated further that the relation between indoor and outdoor effective temperatures, "is not so close that it can be depended upon" as a guide to the regulation of an air conditioning system.

### Moist, Warm Air Is Aid In Treating Fractures

Moist, warm air, locally applied by a special apparatus, has been found to be valuable in the reduction of fractures, simple sprains, and other conditions accompanied by severe swelling, by Dr. Murray B. Ferderber of the University of Pittsburgh. In his paper, "Fever Therapy Locally Induced by Conditioned Air" Dr. Ferderber described how men tolerate a temperature as high as 125° F., while women are more comfortable between 115° and 118° F. induced by means of apparatus placed over a hospital bed.

Dr. Ferderber said that "to the satisfaction of all workers, improvement was noticeable following the inception of saturated heat treatments, and improvement became more evident.

"Very often following open reduction of fractures, or from other causes, edema (swelling) of an extremity may occur characterized by a considerable enlargement of a leg or arm and a shiny stretched skin. Local fever therapy was especially efficacious in this type of disability, and both lymphatic and blood circulations were vastly improved as evidenced by the reduction and swelling previously mentioned.

"The so-called simple sprain produces rather extensive disability and time off whether it is industrial or domestic. Early intensive treatment is indicated, and almost immediate relief from this particular type of accident has been obtained.

"In the course of the investigations many patients with varicose ulcers were treated routinely in order to determine the uses for which this modality might be indicated. The satisfactory results were gratifying," the doctor said.

Dr. Ferderber stated that in spite of the excellent results obtained in the disabilities mentioned above, he does not recommend the moist warm air treatment for arthritis.



### Increase Your Trade with FRICK

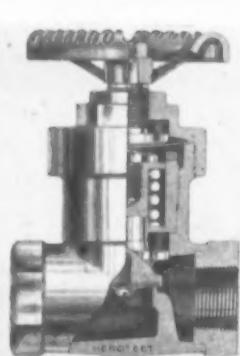
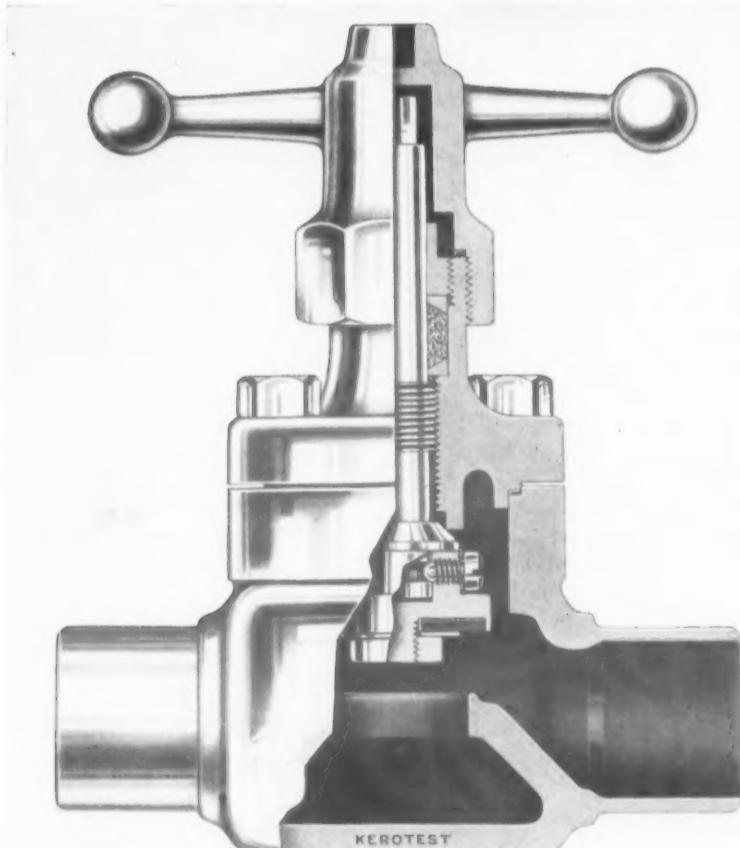
### Unit Air Conditioners

And get the benefits of Frick dependability and Frick economy, at the same time. Large slow-speed refrigerating machines give quiet operation and longest life; water cooled motors and machine spaces give extra capacity—more cooling effect per dollar.

Increase your warm-weather trade! install a Frick Conditioner now. Units are built in 3 and 5 horsepower sizes. Branches and Distributors all over the world. Write:

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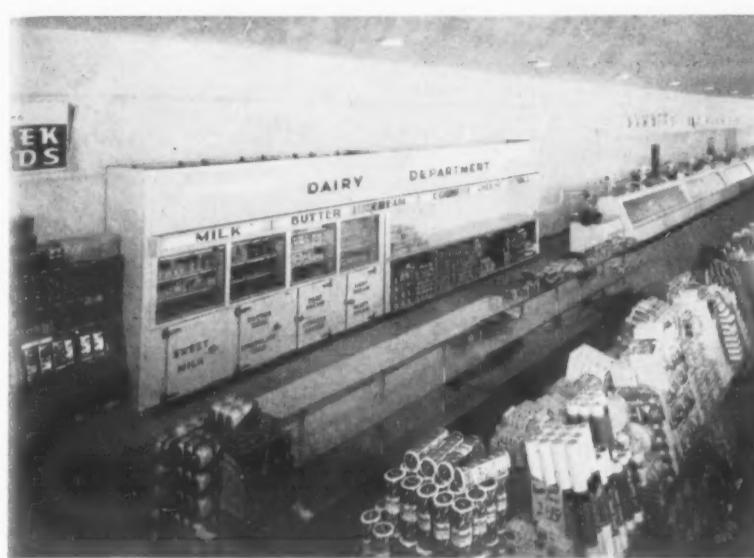
**KEROTEST**  
REFRIGERATION VALVES AND FITTINGS BUILT TO THE HIGHEST SERVICE STANDARD... NEVER TO A PRICE!



**KEROTEST MANUFACTURING CO.**  
PITTSBURGH, PA.

Sizes of these modern air conditioning valves range from  $\frac{1}{8}$ " to  $4\frac{1}{8}$ " solder joints. Valves with female pipe connections are also available from 1" to 2" through Kerotest Jobbers everywhere.

## Will Air Conditioning of This Modern Super-Market Start a Trend?



### Miami, Fla. Merchant Lists Four Reasons For Installation of Cooling Equipment

By J. L. Rosenmiller, Manager, Sales Promotion Division, York Ice Machinery Corp.

When an independent groceryman builds one of the country's largest super-markets, that's news! And when he provides every modern device for the convenience of his customers, including a complete air conditioning system—that indicates a trend.

Carls air conditioned market on Tamiami Trail is a tribute to private enterprise. It is the third and largest of a series of Carls Markets around Miami—built by Aaron Weinkle during the past year and a half, and flourishing on the idea: "Give the best value for as low cost to the consumer as good business will permit."

As one enters Carls Market the first thing that strikes you is its size. "Mammoth" is the word which best describes it. The store is 130 by 185 feet, covering 24,050 square feet of unbroken floor area (no columns), has one-half mile of shelving and display counters and 16,650 square feet of actual merchandising space, every bit of which is air conditioned. The store is reputed to be the largest air conditioned super-market in existence.

During my visit I had lunch at a large, comfortably cooled, up-to-date lunch counter.

#### FOUR-FOLD PURPOSE

Air conditioning serves several important purposes in a food market of this kind: (1) It provides a "haven of refuge" from the summer heat for customers, attracting more trade, encouraging customers to linger longer—buy more. (2) It increases the efficiency of the employees, puts "pep" into the organization when they need it most. (3) The clean, cool air retards spoilage of perishable foods which are on open display and helps eliminate food odors. (4) It also cuts down infiltration of dust and dirt into the store.

Complete protection for the perishable foods under glass or in storage at Carls Market is provided by small, individually controlled refrigeration systems.

One thousand square feet of refrigerated storage space have been provided at the rear of the store for large stocks of meats, vegetables, and dairy products. This space is divided into cork-insulated compartments all 14 feet deep.

#### ARIETY OF TEMPERATURES

The beef room, in which a tem-

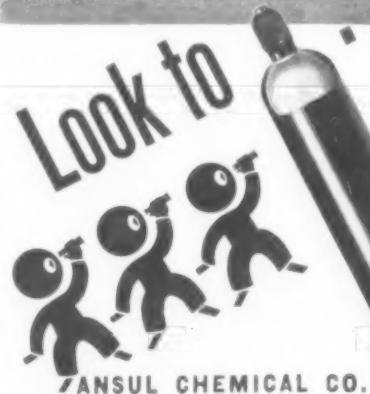
Ever since the Ansul organization was born a quarter of a century ago, the Ansul Idea has been to combine the highest possible product quality with the most expeditious service and the most genuinely friendly customer relations. It is with the feeling that this idea has been largely realized that we say

...ANSUL

for certified quality attested by individual cylinder analysis, for assured working performance, for prompt, understanding service, for a friendly eagerness to match the goodness of our Ansul products with honest helpfulness.

SULPHUR DIOXIDE  
ICE-X  
METHYL CHLORIDE  
Agents for Kinetic's  
"Freon-12"

LET THE ANSUL JOBBER NEAR YOU GIVE YOU BETTER SERVICE



#### MARKET

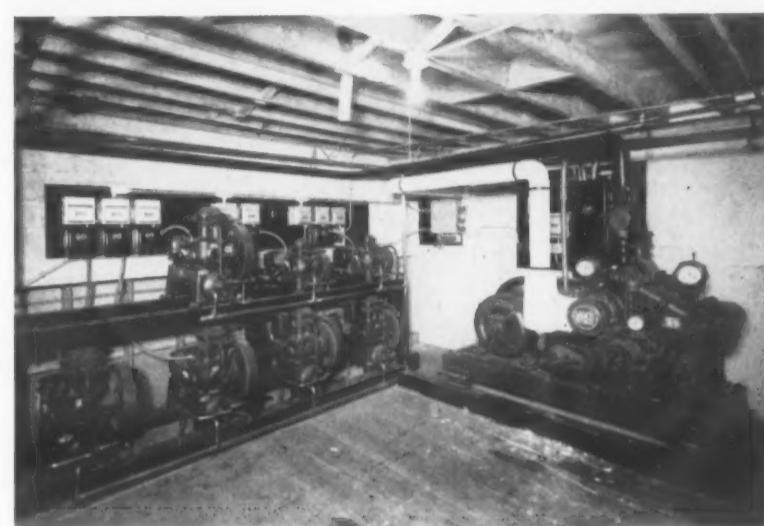
This is the modern type of display case used in Carls Market, completely air conditioned super-market in Miami. Note how both display and storage space for each type of product is clearly labeled.

#### EQUIPMENT

Here is the market's refrigeration and air conditioning room. At the left is a battery of York "Freon-12" self-contained refrigerating units, each handling a separate cooling load. At the right is the 30-hp. York "VV" compressor which supplies refrigeration for the air conditioning system which is built into the same room directly behind this compressor.

the refrigerated storage space, and no floor space is lost.

There are 10 separate refrigerating units—the largest, a 30-hp. compressor which supplies refrigeration for the air conditioning fin coil system. Each of the nine other small units is connected to its respective cooling system in the refrigerated storage spaces or display cases and each operates separately with individual controls. A total horsepower of only 38% is required to operate all 10 refrigerating units.



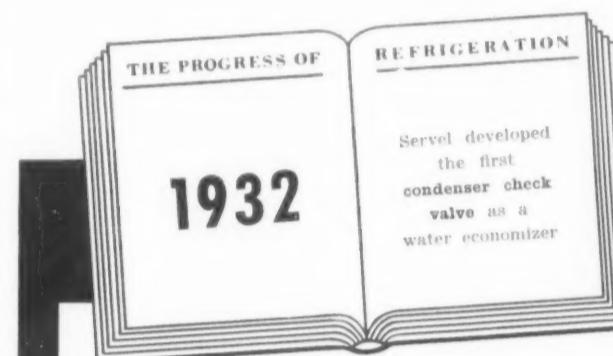
The entire refrigeration and air conditioning system at Carls Market was installed by the Florida Air Conditioning & Refrigeration Corp., York Miami distributor.

"Having purchased both air conditioning and refrigeration equipment over a period of years," says Mr. Weinkle, "we are of the firm belief that the first cost is unimportant if the desired results can be obtained, since these results actually mean the lowest possible cost per year in maintenance and operation.

"An error caused by the purchase of inferior equipment, means financial loss for years of operation, since immediate corrective measures can be applied only at a substantial loss. The indirect loss caused by annoyance, loss of time, products lost due to inefficient operation, etc. can scarcely be measured in terms of money."

#### De Weerth Starts Own Firm

BUENOS AIRES, Argentina—H. K. de Weerth has left the Armour & Co. branch here and has established his own engineering firm.



### There Is No Substitute For Experience

#### WHEN "THE HEAT IS ON" . . .

#### Servel Machines Prove Their Ability to "Take It"

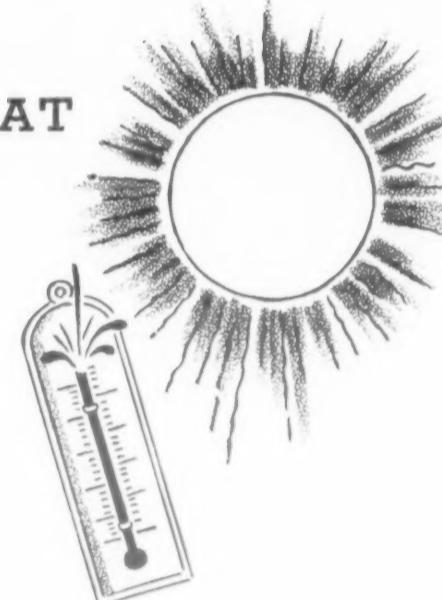
IT'S summer. The dog days are here again. Blazing sun! Melting sidewalks! Bursting thermometers!

These are the times that test refrigerating machines' ability to "take it."

Most machines of average quality will perform well in moderate weather. But when summer comes scorching in with its high room temperatures and extra loads, low efficiency and low capacity become quickly evident.

Servel Silver Fleet units "eat up" hot weather. In the face of extreme temperatures, they go right on demonstrating their ability to deliver dependable refrigeration.

If you are a Servel distributor, this outstanding summer performance



means fewer service calls, lower service costs, better satisfied customers, more repeat business, and extra profits.

If you're interested in a line that can "take it" the year 'round, a note on your letterhead will bring full details. Write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Indiana.

# SERVEL

## COMMERCIAL REFRIGERATION AND AIR CONDITIONING

## AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office; Established 1926 and registered as Electric Refrigeration News

F. M. COCKRELL, Founder

PUBLISHED Every Wednesday by BUSINESS NEWS PUBLISHING CO., 5229 Cass Ave., Detroit, Mich. Telephone Columbia 4242

Subscription Rates  
U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: \$4.00 per year; 2 years for \$7.00. All other foreign countries: \$6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

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VOL. 30, NO. 9, SERIAL NO. 588  
JUNE 26, 1940  
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## Encourage the Inventors

TEN years ago the chief engineer of one of the biggest household refrigerator manufacturing concerns in the world had an idea for a convenience feature. He developed this idea—which was so novel that some of his associates called it "screwy"—and took it to his management.

"Don't be a damn fool," he was told. "Go back to your laboratory and work on something sound. This company has a reputation to maintain."

This chief engineer realized that his idea was unorthodox, and hadn't really taken it too seriously. But when he was called a "damn fool" he got sore, resigned, and resolved that he'd "show 'em all" that his idea was a winner.

### It Was A 'Screwy' Idea, But It Sold Refrigerators

From manufacturer to manufacturer he peddled his patent. They either smiled tolerantly and dismissed him, or turned abruptly away. Finally, in desperation, he dropped in on one of the smallest refrigerator makers in the business. This concern had nothing to lose, liked the idea, and bought it.

So successfully did the idea catch on that this small manufacturer became one of the "big boys" in two years time. Other engineers still condemned the idea as unsound; but it worked, and it sold refrigerators.

### Why Germany Is So Dangerous Today

Across the ocean we are witnessing one of the most amazing upsets of the balance of power in all recorded history. A beaten, broken, hungry country—with no army, no navy, no munitions—in seven years time, and against the combined disapproval and financial throttling of the decent nations and decent citizens everywhere, has practically conquered the continent of Europe, and is even scaring us 'way over here across the Atlantic.

The reason is: Germany en-

couraged her "damn fools." She substituted research for resources, and resourcefulness for resources. Her military chiefs picked up ideas discarded by the general staffs of many other nations, such as: parachute troops (Russia); 30-ton tanks (England); supplanting cavalry divisions with aircraft divisions (France); dive bombers (United States); breakthrough-and-pincers strategy (Gen. Robt. E. Lee of the Confederacy), and so on.

### New Inventions Put Old Generals on the Shelf

Some 17 years ago our lamentably discredited "Billy" Mitchell demonstrated that a bombing plane could sink a battleship. This information was pooh-poohed by the military and naval staffs of every country in the world but Germany, which made the airplane the basis for her whole plan of attack.

While economists kept assuring France and England that "Hitler hasn't enough gasoline" to fight a major war—thus helping lend credence to the widely held beliefs that he was bluffing—two German scientists named Fischer and Tropsch came up with a process which makes gasoline by combining carbon monoxide and hydrogen. Today this "Fischer liquid," which feeds Hitler's planes and tanks, is being turned out at the rate of more than a million tons a year.

And so it went.

### America Has Greatest Race Of Inventors In World History

America need have no fear of any enemy if her "damn fools" are given an opportunity to function and friendly ears to listen, together with a prospect of reasonable reward. All the rest of the world put together can't begin to touch America when it comes to inventiveness. Our "damn fools" have revolutionized transportation, communication, construction methods, production methods, and nearly anything else you want to name.

Encouragement of our inventors, and the realization of their dreams through the efforts of pioneers and promoters, have given us the highest standard of living the world has ever seen.

In the present emergency, let's give our inventors plenty of rope. The man we dismiss as a crackpot may actually have the key to our control of the seas and the air.

## LETTERS

### 'Come and See Us'

—T. J. Newcomb

Westinghouse Electric & Mfg. Co., 246 E. Fourth St., Mansfield, Ohio  
Dear George:

I fully appreciate what a shock the death of Mr. Cockrell caused all of you, and to a lesser degree I am sure it was felt throughout the entire electrical industry.

I, personally, am very pleased to learn that you have been selected as his successor to carry on in his footsteps and feel that it is a reward you have justly merited. In your new responsibilities, I hope it will not prevent a continuance of a personal visit once in a while and we shall always have our latch string out with a hearty welcome. In the meantime, I offer my very best personal wishes for your continued success.

T. J. NEWCOMB,  
Mgr., Household Refrigeration Dept.

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T. J. NEWCOMB,  
Mgr., Household Refrigeration Dept.

## They'll Do It Every Time . . . By Jimmie Hatlo



## Readers Express Confidence In Management of the News

### Harry E. Thompson

Copeland Refrigeration Corp.  
Sidney, Ohio

Dear George:

It was indeed a shock to all of us down here to learn of the sudden death of Mr. Cockrell. He had many admirable qualities and will be sadly missed in the industry.

Let me take this opportunity of wishing you continued success in following "in his footsteps" and I might add that the task is in very capable hands. You may count on my wholehearted support at all times.

HARRY E. THOMPSON,  
President

his fine leadership, personality, and friendship.

Let me extend my heartiest congratulations to you the new standard bearer, whom I am confident will carry on the old traditions with the greatest of success. You know, George, there is an undefinable something that causes a man to "click" with another—and you have that something.

You have my wholehearted and unqualified support in any way that I can render it, and to be of any service at any time would be both a pleasure and a privilege.

E. A. TERHUNE,  
Sales Manager

your staff, I can, with confidence and sincerity, assure those of my friends in the business that the News will continue to grow and expand in importance and service to the industry.

You have much personal ability and you have a young hard hitting organization, and there should be no stopping you. I know you can do a real job and I hope that you will call upon me if I can ever assist you in any way.

I hope that you will accept this letter in the spirit in which it is written and that you will know I am with you all the way. With best wishes for your success and happiness, I am

ART SCHELLENBERG,  
President

### A. W. Seiler

Seiler, Wolfe & Associates, Inc.  
Advertising  
3630 W. Fort St., Detroit, Mich.

Dear Friend George:

I was grieved to learn of the sudden death of Mr. Cockrell. It is good to know, however, that his business interests will be under your capable direction.

We, as an organization, shall be pleased to give you every cooperation in connection with your new undertaking.

With cordial regards,

A. W. SEILER,  
President

### Frank J. Gleason

Copeland Refrigeration Corp.  
Sidney, Ohio

Dear George:

I am quite sure that with the marvelous background you have acquired by virtue of your many years association with the late Frank Cockrell, together with your initiative, ability, and desire to forge ahead, that you will be able to build AIR CONDITIONING & REFRIGERATION News to even greater success in the years to come.

You have my wholehearted support, and with best wishes for continued success, believe me.

FRANK J. GLEASON,  
Vice President

### Art Schellenberg

Alco Valve Co.  
2028 Big Bend Blvd.  
St. Louis, Mo.

Dear George:

The death of Mr. Cockrell was certainly a shock and I still find it difficult to believe. I have admired Mr. Cockrell for a number of years and have fully appreciated what he has done for our industry.

Let me assure you that I will be back of you 100% and feel confident that you will be able to successfully assume the new responsibilities so suddenly thrust upon you.

The biggest job we have here at Alco can do for you at present is to assure those in the industry that the new management of AIR CONDITIONING & REFRIGERATION News is thoroughly competent to continue and improve the position of the News in the industry. Knowing you and most of

### Walter A. Bowe

Carrier Corp.  
Syracuse, N. Y.

Dear Friend George:

The news of Mr. Cockrell's passing is, of course, a distinct shock to the industry. He certainly was a militant and constructive influence in air conditioning development and distribution.

However, the blow is softened by the fact that such an understanding person as yourself is going to carry on. We here, are particularly delighted because we have always felt that you were close enough to us to know of our attitude toward the industry. I trust that with your new responsibilities your visits here will not be spaced further apart.

Good luck to you.

WALTER A. BOWE,  
Advertising and Sales  
Promotion Manager

### L. A. Clark

Frigidaire Division  
General Motors Sales Corp.  
Dayton, Ohio

Dear George:

I was very much shocked in picking up a copy of REFRIGERATION News in New York last week and learning about Mr. Cockrell's death. It must have been a terrific blow to you especially coming just when it did.

Even though Frank's health must have kept him from being as active as he might have been in recent years, yet I know that you are going to miss him greatly in the carrying on of the News. I know that you will be more than equal to the job that you have set for yourself and I also look forward to a continuation of our future relationships on the same friendly basis as in the past.

L. A. CLARK,  
Advertising & Sales Planning  
Manager—Appliance Division

### L. H. D. Baker

Gale Products  
Galesburg, Illinois

Dear George:

I heard of Mr. Cockrell's death during my trip to the Coast, and, of course, assumed that you would take over the reins and continue to run the business as he had done in the

(Concluded on Page 11, Column 1)

## 'We're With You,' Say Subscribers

(Concluded from Page 10, Column 5) past. Frankly, I know of no one better suited to keep the paper at the high standard it has always enjoyed, and you may depend upon me to do whatever I can to help you in your ambition.

While sympathizing with you with regard to Mr. Cockrell's death, I at the same time feel constrained to tender you my sincerest congratulations and to assure you that so far as I am concerned I feel that the News is in safe hands.

L. H. D. BAKER,  
Sales Manager

### F. R. Pierce

Nash-Kelvinator Corp.  
14250 Plymouth Rd.  
Detroit, Mich.

Dear George:  
Needless to say, we were all shocked when we learned of Mr. Cockrell's passing away, and I want to extend my personal sympathies to you and the other members of your organization. I am sure Mr. Cockrell made a fine contribution to the refrigeration industry, and, as time goes on, the value of his contribution to the industry will be more evident than it is even at the present time.

My sincere congratulations to you in your new position as publisher and editor of the AIR CONDITIONING & REFRIGERATION News and president of the Business News Publishing Co. You can most certainly count on my wholehearted support, and I hope the George-and-Frank basis of operating will continue for many a year.

When you get over to this end of town please be sure to drop in so we can have a chat.

With kindest regards,

F. R. PIERCE,  
General Sales Manager

### Ralph C. Cameron

Kelvinator Division of  
Nash-Kelvinator Corp.  
14250 Plymouth Rd.  
Detroit, Mich.

Dear George:  
Please add my name to the list of your many friends who are confident that you will do what you set out to do as the new publisher of AIR CONDITIONING & REFRIGERATION News, and president of the Business News Publishing Co.

My best to you.

RALPH C. CAMERON,  
Manager, Major Market Sales

### Vernon E. Vining

Westinghouse Electric & Mfg. Co.  
246 E. Fourth St., Mansfield, Ohio

Dear George:  
You can count on me.

VERNON E. VINING,  
Director, Department Store Sales

### John Wyllie

Temprite Products Corp.  
47 Piquette Ave.  
Detroit, Mich.

Dear George:  
I too was shocked at the news of the sudden death of Mr. Cockrell and knowing the relationship which existed between yourself and him, I can realize the extent of the loss which you have sustained. Please accept my deepest sympathy.

I have watched your achievements in connection with the News with much interest and enjoyment and although your promotion comes to you now as a result of this regrettable event, I am glad that it is upon your shoulders that the mantle of publisher has fallen.

The News has an enviable and dignified record and I think that all of us in the industry, and particularly those of us who were in it when the first issue of the News was published, feel that we are, in a sense, partners of your enterprise. Because of this feeling and also because of the need which the industry has for the News, I wish

you every success in your new responsibility and if I can help you in any way, I shall be very happy to do so.

JOHN WYLLIE, JR., Gen. Mgr.

### C. V. Calkins

Bendix Home Appliances, Inc.  
3300 W. Sample St.  
South Bend, Ind.

Dear George:

I was both surprised and grieved to know of Mr. Cockrell's death. I had met him several times in the past, but didn't know him well; however, with the help of his organization he has done a great deal for the refrigeration appliance industry.

George, I want to congratulate you, the coming editor and publisher of REFRIGERATION News, and I am sure that you will do a swell job. You have my heartiest congratulations and support.

C. V. CALKINS,  
Sales Manager

### A. L. Scaife

General Electric Co.  
1285 Boston Ave.  
Bridgeport, Conn.

Dear George:

It was a great shock to hear about Frank.

You may be certain that anything I can do to help will certainly be forthcoming. I know that with the wealth of experience you have in this business, you will be able to carry on.

Best of luck to you.

A. L. SCAIFE,  
Merchandise Manager

### John F. Ditzell

John F. Ditzell  
3740 Lake Shore Dr., Chicago, Ill.

Dear George:

I am sure that the wide-spread and instantaneous expression of the Industry's Tribute must be a real source of comfort and pride to the family and the business associates of Frank Cockrell.

Permit me to join in that expression!

As long as those who are now engaged in the industry and as long as those who have been in it during the past decade breathe the air of this great land that we are now so passionately trying to defend, they shall remember Frank Cockrell and the splendid work he contributed to the industry's success.

Frank always stood for sound principles, and when the industry showed any tendency to break away from soundness and good business ethics he would be the first to come forward with the right advice and support that advice with every power within his command.

His interest and encouragement to Rema is only one of the many contributions he has made to the industry. Pages could be written about his advice and general counsel to the industry particularly, during the early years of Nema.

But the King is dead. Long live the King!

You are succeeding a worthy man and you are fully capable of assuming that responsibility. I know that you have the confidence of the industry and that you will carry on in the same spirit and with the same high principles that were always manifest in Frank's work.

JOHN F. DITZELL

### M. W. Knight

Peerless of America, Inc.  
515 West 35th St., Chicago, Ill.

Dear George:

I know how your organization must feel at the loss of Mr. Cockrell and I know the entire industry is grieving over his death. He has been a friend to all in this business and a father to many of us. There is no man in this industry, that I know, who has "fathered" this business more than Mr. Cockrell. He lived it from morning to night and was

always thinking of some way of helping others.

He was a man of great character and one who would talk to the smallest individual in this business the same as he would to the executives. No man was too small or too big for him to sit down and help, as well as give sound advice. I could go on to much length in this letter, George, talking about Mr. Cockrell, but you and the organization know him better than the rest of us, but I just wanted you to know that everyone that I talked with and passed on the news of his death, feel very badly about it.

However, everyone is 100% behind you and feel that you will have no trouble in stepping into Mr. Cockrell's shoes and continuing on publishing this wonderful trade paper.

I want to congratulate you on being appointed as Publisher and President of the Business News Publishing Co. and assure you of our company as well as our personal support on trying to put the job across and expanding the company and paper along the lines Frank had in mind.

I sincerely regret the loss of Frank but know that you and your co-workers will continue your efforts along the lines that he outlined for two reasons—first, to put the job across and second, in respect to him.

M. W. KNIGHT,  
General Sales Manager

### I. J. Knudson

Detroit Lubricator Co.  
Detroit, Mich.

Dear George:

I was not aware of Frank's passing away until very recently, and it was certainly a shock to be advised of it.

He, as you know, and I had been very good friends for a good many years and I remember him coming into our office before he started the paper and asking our thoughts as to the possibility of such a paper existing in the industry recalling that I was one of those who believed that there was a place for such a paper.

I want to congratulate you on being appointed as Publisher and President of the Business News Publishing Co. and assure you of our company as well as our personal support on trying to put the job across and expanding the company and paper along the lines Frank had in mind.

I sincerely regret the loss of Frank but know that you and your co-workers will continue your efforts along the lines that he outlined for two reasons—first, to put the job across and second, in respect to him.

I. J. KNUDSON,  
Manager, Refrigeration Div.

### C. A. Miller

Servel, Inc.  
1411 Financial Center Bldg.  
Oakland, Calif.

Dear George:

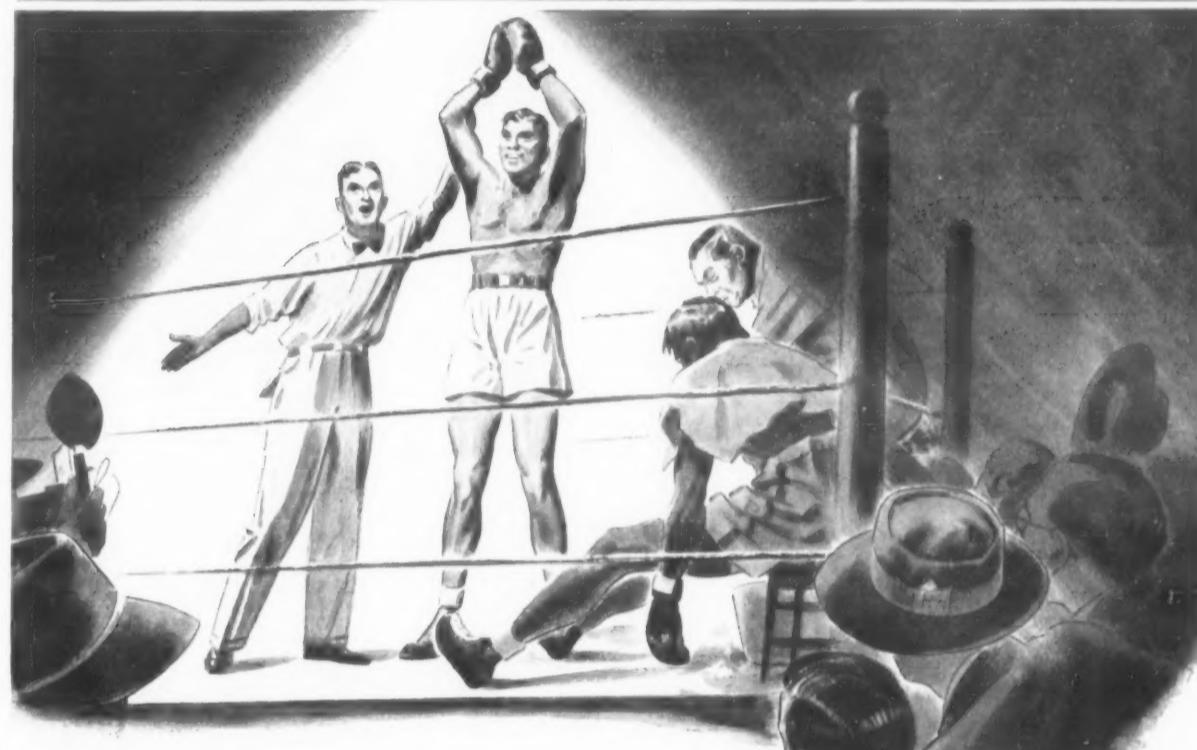
I am certain that there will be hundreds of others besides myself who will be shocked to learn of Frank Cockrell's death, as advised in the issue of May 29.

It was my privilege to know Frank during the time that he was connected with the Society of Electrical Development, and, of course, prior to the inception of the REFRIGERATION News. I got to know him much better during the very strenuous days in Chicago, when, incidentally, it was my privilege to meet you for the first time.

I recall distinctly your telling me in the early days of your relationship with Frank, of which you were always so proud. Your association with him during the past many years should well equip you to assume the responsibilities as Editor and Publisher.

I join with you in your loss, but wish to express every best wish for your continued success.

C. A. MILLER,  
Regional Sales Mgr.



## THE FINISH

**IS the Final Thrill in a Heavy-weight Championship Bout...**

**SYNTEX WHITE SYNTHETIC ENAMEL**

*is a daily thrill to the proud possessor of a refrigerator so finished.*

★ There are today more than 1,500,000 owners of refrigerators finished in Jones-Dabney Syntex White who are daily reminded of its beauty and durability.

In many large industrial operations Syntex White Enamel is the standard finish, in others it is the safe alternate.



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## Radiant Heating and Cooling Offset Wall Losses In Air Conditioned Bankers Life Building

### Design Incorporates Perforated Ceilings, Four Zone Control and Electrostatic Air Cleaning.

DES MOINES, Iowa—Heralded as a triumph in functional design, the recently completed Bankers Life Building here is equipped with a four zone year-around air conditioning system supplemented by a unique wall panel warming and cooling system. Low maintenance cost was the prime consideration in the selection of all equipment for the building, irrespective of first cost.

The wall warming system was designed to blanket out heat in summer and to blanket out cold in winter. All plaster has been eliminated on five floors of the building, where steel wall panels are heated by means of 1-inch bare copper tubes.

While the air handling system is capable of heating the structure, the heated panels are used to offset descending currents of relatively cool air directly adjacent to the wall or glass surface.

#### STEEL WALL PANELS

The panels also eliminate radiation of body heat to cold surfaces on the exterior walls of the building. The wall warming system was essentially designed for winter service, but has been equipped so that chilled water can be circulated in hot weather. It was not considered advisable, however, to increase the surface to compensate for full sun effect under summer conditions.

Charles S. Leopold, consulting engineer of Philadelphia, who designed the system, describes it in this way:

"The walls need to be heated only to a temperature at which the average radiating temperature of the windows and walls will limit the rate at which the body loses heat by radiation, and to approximate the average radiating temperature of interior walls, floor, and ceiling."

"The required temperature is in the vicinity of 70° F. With this installation local sensations of

warmth or coolness from interior partition to outside wall is practically eliminated."

Use of the panel warming system eliminates radiators around the outside walls of the building, which adds about 8% to the useful floor area. The elimination of columns permits a further increase of more than 12%. Leland A. McBroom, architect in charge, estimates that another entire floor would have to be added to the building if radiators and columns had not been eliminated.

Conditioned air is introduced to the building through perforated metal acoustical ceilings. On five of the six floors workrooms as large as 235 feet long and 50 to 90 feet wide have been created, with no interior columns, no radiators, and no obstructions of any kind.

Only exceptions to this method of air distribution are in the sixth floor private offices and in the auditorium. In these private offices individual control of temperature is handled by booster heaters in the ducts which deliver air upwards from grilles in window sills. The auditorium is supplied with conditioned air by high velocity diffusers.

#### 650-TON SYSTEM

The refrigeration equipment consists of three compressor units, two of 260-ton capacity and one of 130-ton capacity. These are powered by 300 hp. and 150-hp. synchronous motors, respectively, and connected with evaporative condensers.

The compressors are connected with equalizing lines and a special automatic system for controlling the oil returning with the suction gas.

The compressors discharge through pulsation tanks into a pair of horizontal multipass shell-and-tube condensers, each 34 inches in diameter and 17 feet long, which are equipped with tubes of Admiralty metal. A purger saves both power and refrigerant.

There are also two receivers, each

24 inches in diameter and 16 feet long, and two spray-type water coolers, 42 inches in diameter and 12 feet long.

Connected to the coolers are "Freon-12" liquid pumps of 4-inch size, as well as the necessary exchanger filter and float valves.

Capacity controls on each cylinder of the compressors permit reduction of the output of any one machine in steps of 87½, 75, 62½, and 50%.

Two main conditioned air fans and the fan used for return and exhaust are located in the penthouse of the building. In all, there are 22 fan units in the supply duct and exhaust system.

Air entering the system is first passed through electrostatic precipitators which remove much of the dust, dirt, and bacteria. Replacement type filters are used to complete the process of dirt removal.

An air washer adds or removes moisture as needed, and cools the air mixture in summer. After washing the air reaches the main supply fan which supplies conditioned air to seven local recirculating fan units.

Room temperature is kept at a predetermined level by introducing the conditioned air through the perforated ceilings at room temperature or below, and this is also true in winter since the heat loss through walls and windows is balanced by the perimeter warming system.

#### DOUBLE WINDOWS

Double glass windows are used throughout the building and with the exception of the sixth floor all windows are set in panels of glass bricks. This frame of glass blocks is shaded so far as possible by projecting piers, so that radiant heat stored in the glass blocks will be reduced.

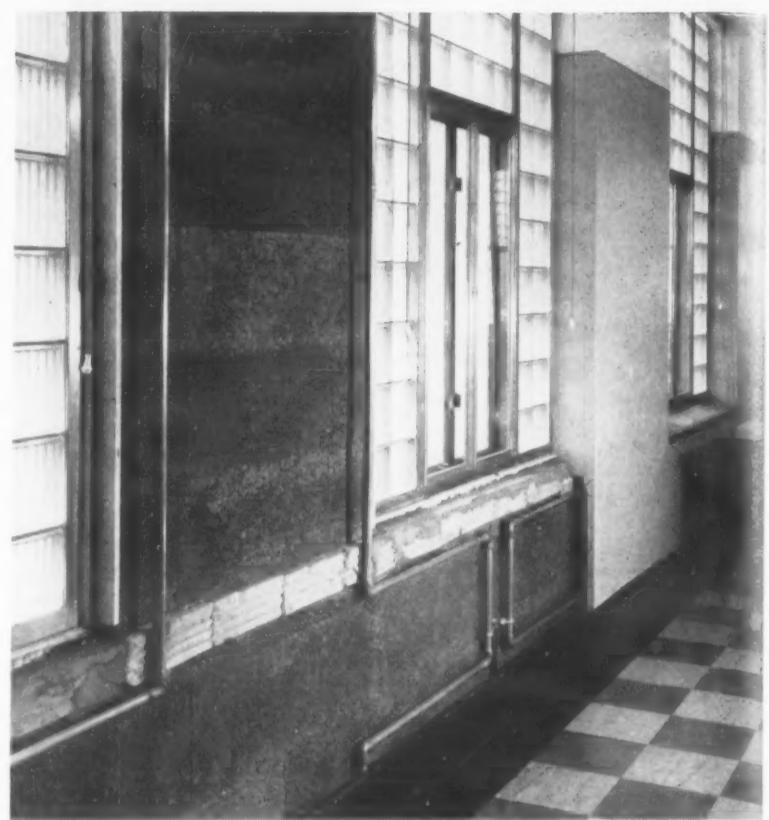
The heating and ventilating system is divided into four major zones on each floor—north, south, east, and west. Each of these zones is subject to independent thermostatic control.

Controls that govern the temperature of water through the radiant system (actually four separate systems) automatically adjust for the required temperature in each zone in direct relation to the exterior conditions to which the zone is exposed. Similarly, the four duct systems are controlled automatically for humidity and temperature.

The control desk and switchboards in the compressor room govern the operation of the air conditioning and wall warming systems. Three panels at the left control the compressor motor, and three at the right control the chilled water, condenser water pump, and auxiliaries.

The center control section contains a panel at the lower right for the control of the following equipment: fans, spray pumps, compressors, radiant heaters, booster heaters,

## Copper Pipes Temper Wall Panels



Sectional steel wall panels are removed to show the copper piping of the wall warming system. Cold water may be run through these pipes during hot weather to offset a portion of the solar heat gain. Under normal operation the air conditioning system introduces air through the ceiling below room temperature at all times.

boilers, and electrostatic cleaners. Alongside the units on this panel are pilot lights and start and stop buttons. A master thermostat is located at the top of this panel.

#### ELABORATE CONTROL SET-UP

Another panel on the left contains selector switches which enable the operator to check temperatures at key points throughout the apparatus and at 24 stations throughout the building. These temperatures are indicated on an electrical thermometer at the center of the control desk.

The building superintendent keeps a daily log covering all conditions in the system. A total of 57 entries is made on this record every two hours.

Manufacturers, contractors, and others who participated in the installation include:

Air conditioning and heating contractor: Pennsylvania Engineering Co. Refrigeration equipment: Frick Co. Motors, starters, control panels: Westinghouse Electric & Mfg. Co. Sheet metal: Backman Sheet Metal Works. Pumps: American Well Works. Copper pipe and fittings: Mueller Brass Co. Cooling tower: The Marley Co. Dehumidifiers, air washers: Clurage Fan Co. Blowers, air handling equipment: American Blower Co.

V-Belt drives: L. H. Gilmer Co. Electrostatic filter: Westinghouse Electric & Mfg. Co. Replacement type air filters: American Air Filter Co. "Freon": Kinetic Chemicals Co. "Freon" pumps: Goulds Pumps, Inc. Grilles: Barber-Colman Co., Tuttell & Bailey, Inc. Condensation pumps: Nash Engineering Co. Thermal insulation: Armstrong Cork Co.

& Magnesia Materials Co. High velocity air diffusers: Anemostat Corp. of America. Steel pipe: National Tube Co. Valves and welding fittings: Crane Co. Controls: Powers Regulator Co. Recording instruments: Brown Instrument Co. Thermometers: Taylor Instrument Co. Sound and vibration insulation: Vibration Eliminator Co. Korfund Co. Booster heater coils, reheaters, preheaters: John J. Nesbitt Co. Boilers: Kewanee Boiler Co. Oil burners: Johnson Burner Co. Oil tanks: Pittsburgh-Des Moines Steel Co. Heat exchangers: Whitlock Coil Pipe Co. Convector heaters: Modine Co. Fuel oil heaters: Davis Engineering Co. Welding gas, air, and rods: Air Reduction Sales. Electric welding rods: Lincoln Electric Co. Boiler cut-offs and pressure control: McDonnell & Miller. Consulting engineer: Charles S. Leopold. Architects: Tinsley, McBroom & Higgins.

Such headed by management these two assistants competitor qualified of merchant carpets men's wear goods, else disp. Usually able to have a little else. The P display problem done and usually his assist him at work for of course

## 1,314 Weathermasters Being Installed In New Building

WASHINGTON, D. C.—Delivery of 1,314 air conditioning units—largest number ever to be installed at one time in a privately owned new building—was started recently by Carrier to the new Lafayette building here.

The modern 14-story structure will open early in July. It will house offices of the Reconstruction Finance Corp. in addition to a restaurant and general offices.

In addition to the 1,314 Weathermasters, two 810-ton centrifugal machines are included.

Contract for air conditioning is being handled by Raisler Corp.

## CURTIS REFRIGERATION

It's easy—and profitable—to meet the fast growing public demand for comfort cooling with the complete line of Curtis Packaged Air Conditioners. Five models, 3, 5, 7½, 10 and 15 ton capacity.

Curtis units have the advantage of complete factory design and assembly and are precision engineered throughout, made of the highest quality materials.

When you sell the Curtis line you can meet the requirements of all classes of retail establishments, offices and residences and at the same time offer the following advantages at surprisingly low cost.

- Units are self-contained, semi-portable, easily moved
- Can be installed in one day without disturbing fixtures
- Air is cooled, dehumidified, circulated and filtered
- Low first cost—readily financed
- Maximum efficiency—quiet, economical operation
- Attractive external appearance
- Adaptable for heating if desired

Get your share of the growing sales and profits in the packaged air conditioning field. For full information write to Curtis today.

## CURTIS REFRIGERATING MACHINE CO.

Division of Curtis Manufacturing Co.  
1930 Kienlen Avenue St. Louis, Missouri  
Established 1854



Packaged type store cooler  
—3 and 5 ton sizes

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# Improved HEAT EXCHANGER

Compact and Efficient For Ice Cream Cabinet Installation

• The Heat Exchanger illustrated below is an addition to our line and intended for use in ice cream cabinet work and in similar installations where a small, compact, yet very efficient heat exchanger is required. Note that overall length is only 8½".

It is designed to provide maximum heat exchanging capacity where available space is at a premium. Special combinations of inlet and outlet fittings can be furnished so that this compact unit can be adapted to your particular requirements.

Catalog No.	Suction Line	Liquid Line	Overall Length	Heat Transfer Area
A-13730	1/8" Flare	1/4" Flare	8½"	18 Sq. In.

Flare Nuts and Seals are furnished with Exchanger, thus keeping units dry and clean.

**MUELLER BRASS CO.**  
PORT HURON, MICH.

**If I Were a Jobber (No. 3)****Professional Display Man Can Help Dress Up Jobber's 'Silent Salesmen'**

By Zeke Carrithers

For professional assistance on display work as may be needed for the windows, display cases, and interior displays in a jobber's place of business, there are two quickly available sources upon which to draw.

First, there is the independent display man who usually can be located by referring to the classified pages of the city directory under the classifications "Window Display Backgrounds," "Window Display Fixtures," and "Window Display Installations." A few telephone calls to these listings will usually get results. Among those groups if the desired man is not found, one can usually obtain the information as to where to locate the type of talent wanted.

Another direct and simple source of talent can be located among the leading department stores.

Every big department store such as Field's, Chicago; Gimbel's, New York; Kaufman's, Pittsburgh; Pogue's, Cincinnati; Scrugg's, St. Louis; and stores of that type maintain a sizable display department. This department is responsible not only for the window displays but also for all display work in the store.

Such a department is usually headed up by a high-priced display manager and an assistant. Under these two is a sizable staff of assistant display men who are very competent, experienced, and well qualified in the display of all kinds of merchandise from buttons to rugs, carpets and draperies, including men's wear, millinery, shoes, piece goods, silverware, and everything else displayed in a department store.

Usually these assistants are available for evening work and are glad to have the opportunity to pick up a little outside money.

The procedure is to phone the display manager and state your problem—that is, what you want done and ask him for help. He will usually be glad to pick out one of his assistants whom he knows can use a little extra money and place him at your service. This outside work for the display man is done, of course, after the regular department store hours.

**This Is How One Jobber Handled His Display**

A Detroit jobber wanted to get some assistance in arranging his display case. He phoned one of the leading department stores, contacted the display manager, who put him in touch with one of the assistant display men.

This jobber made an appointment with the display man to come to his place at 7 o'clock of an evening and spend about two hours.

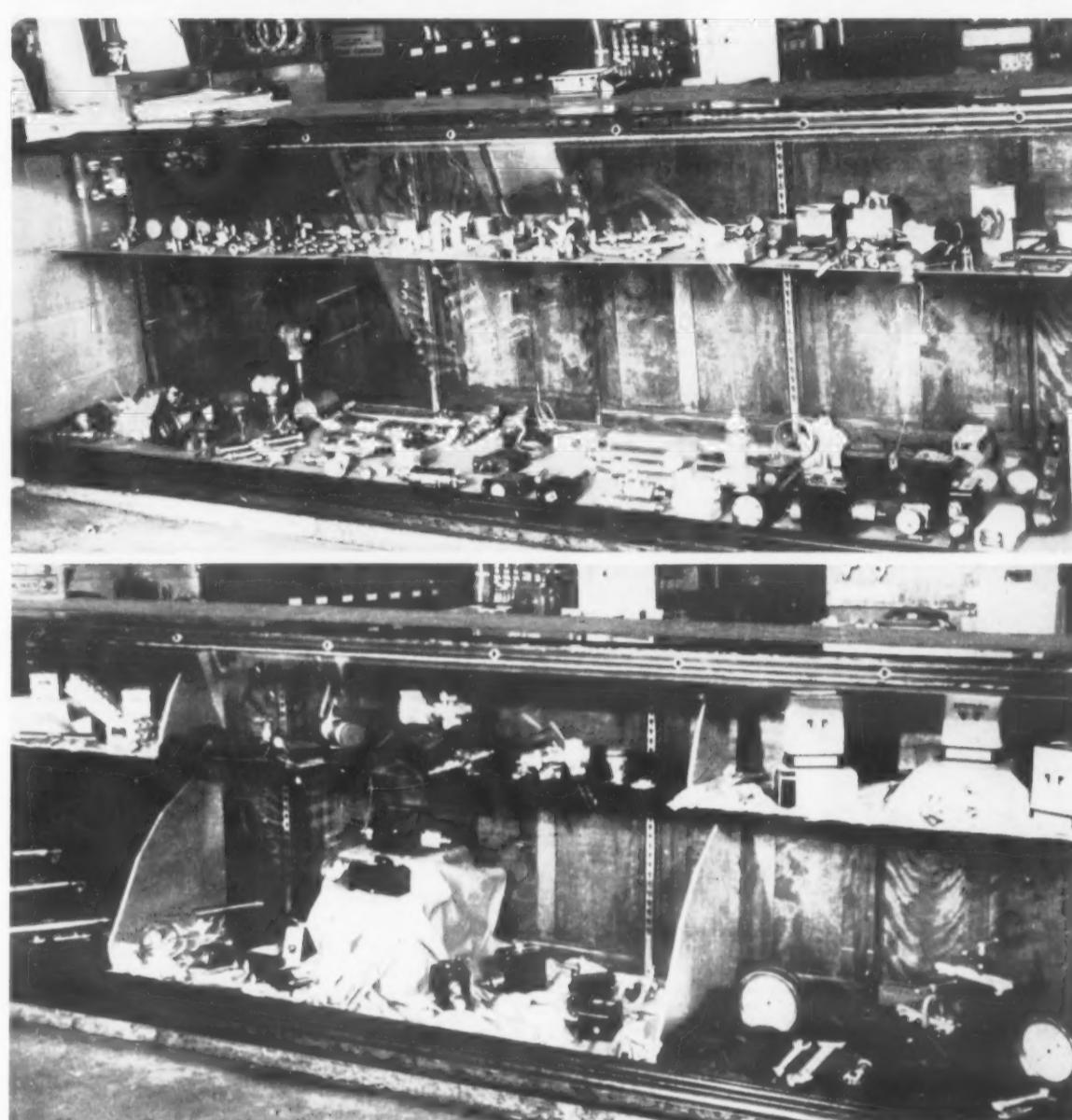
Picture No. 1 shows the display case before the display man went to work on it. This type of arrangement, of course, has certain advantages in that it contains quite a large stock and variety of merchandise which the service man can look at and which the counter man can reach in and pull out and place in the customer's hands. This is a very serviceable arrangement but from a display standpoint, it does not attract attention to any one thing. It merely shows a lot of varied merchandise.

Picture No. 2 shows the same display case arranged in units. This display case has a top shelf and a lower compartment. Two dividers were used in breaking up the top shelf into three units. Two more dividers were used in breaking up the lower compartment into three units.

This then resulted in six units giving the effect of six small display cases or windows.

Dividers were home made of wall board fitted into a block of wood which had been grooved so that they stood upright. Dividers should be a neutral color. These were painted aluminum.

It might perhaps be a more effective idea if the dividers were painted mahogany or walnut or the same color or finish as the woodwork of the case itself.

**Jobber's Display Case Before and After Dressing**

Upper photo shows arrangement of a Detroit jobber's display case before a professional trimmer went to work. Lower photo shows the results of the expert's efforts which are explained in the accompanying article.

quite a volume of favorable comment of a constructive nature.

The outstanding thing, I think, is that the display case as arranged in Picture No. 2 has attracted a great deal more attention than as arranged in Picture No. 1. Another advantage of this unit idea is that it can be

changing it every week or so and juggling it around.

It would be quite possible to break up the top shelf into four or five small units and maybe the lower section into four small units thus offering variety to the customers who come into the store.

It is well to bear in mind that

customers who come in regularly become so accustomed to looking at the same arrangement, same setup, same merchandise, same everything time after time that nothing attracts their attention.

Frequent changes of the displays offer the opportunity for presenting all customers new bait as they call.

## A LESSON IN "Cold Logic" about . . . **BUSH CIRCULATOR COILS**

Yes, Folks, these circulator coils are complete evaporators—a modern development on a "proved" sound engineering principle. Only Bush offers all these features:

1. Pan Hanger of heavy gauge aluminum.
2. Cold air flue designed for positive air circulation.
3. Fibre washers—condensate CAN'T run through.
4. PANS HAVE 1" INSULATION COMPLETELY SHEATHED IN ALUMINUM.
5. ENDS FINISHED—NO RAW EDGES.
6. Specially treated paper strips between top and bottom of pan.
7. Paraffin dipped wood spacers prevent cold conduction.
8. Large overdrain—eliminates all spill from pan drain.

Bush Circulator Coils are made for standard size walk-in coolers, or are custom made to your particular specifications. And remember—all Bush surface figures are for ACTUAL EXPOSED AREAS. No necessity to include safety factor when figuring Bush surfaces.

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## Ice Cream Manufacturing Executive Warns Refrigeration Industry of Needed Improvements in Cabinet Equipment

### Brodesser Says Ice Cream Companies Must Have Service-Free Units or They May Turn To Dry Ice

SKYTOP, Pa.—What an executive of one of the leading ice cream manufacturers thinks about the refrigeration equipment with which he has to work was told to members of the American Society of Refrigerating Engineers at their meeting here this month when the engineers were addressed by R. A. Brodesser, vice president, Southern Dairies, Inc., Washington, D. C.

Tracing the development of ice cream cabinets, Mr. Brodesser stated that while great strides have been made, there is still much work to be done, and indicated that dry ice cabinets might make considerable inroads on the cabinet market unless further improvements were made in mechanical refrigeration systems.

Motor repair and service is one of the biggest items of service expense on cabinets, Mr. Brodesser declared, and he also pointed out that much of the motor trouble is caused by short-cycling of direct expansion cabinets that do not have a hold-over feature.

**SEALED CONDENSING UNITS**  
Mr. Brodesser stated that his company had given considerable attention to sealed condensing units in ice cream cabinet work. Questioned by K. M. Newcum of Superior Valve & Fittings Co. as to the kind of metering device used in systems operating from sealed units, Mr. Brodesser answered:

"We have found the high side float best with sealed units and systems using 'Freon' refrigerant."

In answer to another direct ques-

tion from the floor Mr. Brodesser declared that his company uses nothing but direct expansion systems.

"We have eliminated sweet water bath systems because of the corrosion factors," he explained.

There was considerable discussion also on the use of brines and hold-over solutions, which Leon Buehler of Frick Co. summed up by stating that the use of brine in an ice cream plant depends on the load factors and the power rates. Where you use brine you use more energy, said Mr. Buehler, unless there are other advantages or compensating factors such as might be found in "storing" the refrigeration effect.

Said Mr. Brodesser in his comments about refrigeration practices in the ice cream industry:

#### EARLY CABINET DESIGN

"When introduced 15 or 20 years ago, mechanically refrigerated ice cream cabinets were a fairly simple apparatus, consisting of an insulated brine tank with low side float valve, a few feet of copper tubing, and a compressor. Sulphur dioxide was the common refrigerant. One manufacturer was the leader; other makes followed the same general design.

"Until 1931, this situation prevailed. The only changes were details of a mechanical nature and changes in compressor design and capacity. The old water-cooled, gear-driven type of compressor, with insufficient shut-off valves for allowing the service man to work on the machine without emptying the store of all human inhabitants escaping

"Thus was started the controversy still raging: 'Shall we or shall we not use a hold-over?' Other manufacturers continued the use of methyl chloride as a refrigerant but adopted the high side float.

"To the ordinary service man, these were new and terrifying changes. At once, he was confronted with a new refrigerant, coil design, and two new types of refrigerant metering devices. A whole new field of grief was opened to him. Fortunately, there were no major changes in compressor design this year.

from the  $\text{SO}_2$  fumes, was superseded by air-cooled models, belt driven, and more amenable to service operations.

"Cabinet changes were of a minor nature. The cabinet remained an insulated tank. Amounts of insulation were changed, and top and lid construction were improved to prevent water soaking, condensation, and warping. From a service and expense standpoint, the most important development was silver soldering of boiler tubes.

#### PROBLEM TO SERVICE MEN

"In 1932 came the almost universal adoption of direct expansion cabinets, with the exception of the larger models; the majority of them used an automatic expansion valve, but some used a high side float. In one line  $\text{SO}_2$  was abandoned for sealed tanks of a eutectic solution.

"Thus was started the controversy still raging: 'Shall we or shall we not use a hold-over?' Other manufacturers continued the use of methyl chloride as a refrigerant but adopted the high side float.

"The cabinet of today is incomparable with that of several years ago. It is no longer a rectangular tank, but an eye-appealing fixture in the dealer's store. The trend has been toward a compact, light, cabinet of sturdy construction, of the chest type, with white panels and a gleaming top with rounded corners, which will not require a skilled mechanic and a great outlay of material and labor to install, and which will require the minimum of service.

"Just as in the refrigeration of trucks, there is development in the use of dry ice for refrigerating ice cream cabinets. In areas where the cost of  $\text{CO}_2$  equals that of purchased power, electrically operated compressors will be obsolete."

that greets the manager's eye in his service expense account.

"Another large item is belt replacements. Even periodic inspections of the equipment have not reduced these costs enough. With these factors in mind, plus the advantage of removing the compressor seal, our company instigated development work on the sealed type compressor for ice cream cabinets. They have been in use now for five years, have passed through the experimental stage, and are now being supplied by most cabinet companies.

"A contributing cause of motor difficulties has been short-cycling of direct expansion cabinets with no hold-over feature. This is one reason our company prefers the hold-over type cabinet.

#### INDUSTRY GUINEA PIGS?

"Installation and service costs are such an item that the ice cream companies, in the majority, have been willing to be guinea pigs for development work during recent years.

"The cabinet of today is incomparable with that of several years ago. It is no longer a rectangular tank, but an eye-appealing fixture in the dealer's store. The trend has been toward a compact, light, cabinet of sturdy construction, of the chest type, with white panels and a gleaming top with rounded corners, which will not require a skilled mechanic and a great outlay of material and labor to install, and which will require the minimum of service.

"Just as in the refrigeration of trucks, there is development in the use of dry ice for refrigerating ice cream cabinets. In areas where the cost of  $\text{CO}_2$  equals that of purchased power, electrically operated compressors will be obsolete."

#### NEEDED IMPROVEMENTS

"In the direct expansion systems in equipment such as holding vats, surface or cabinet coolers with flooded controls (which need more accurate control), there is still need for development because moisture content of the dairy products freezes

on the cooling medium, and this reduces the efficiency of the refrigeration.

"The refrigeration control of ice cream freezers, particularly the continuous-type, is satisfactory but engineering advances will undoubtedly continue to improve them. The loss of refrigeration due to oil film can undoubtedly be eliminated by further development.

"A number of years ago, when making additions in some of our plants, we installed in our low-temperature storage rooms a new arrangement of refrigeration piping. Coils were arranged in the form of

valve-in-head design.

"By this method, we eliminated the wood or steel divisions formerly used, were able to greatly increase

"the temperature at which ice cream should leave the storage room is  $-20^{\circ}\text{F}$ .

"Of course, the constant renewal

of cold, by means of the truck-operated compressor, will eliminate that problem, and give satisfactory operating temperatures for a long period of time.

"In the last few years, there have been many improvements made in dry ice systems for truck refrigeration. With one of these modern

circulating systems for  $\text{CO}_2$  with the controllable valves and proper insulation of the truck body, a highly efficient system is obtained for use under any atmospheric conditions.

"Mechanical service to this type of refrigerator body is, of course, pretty much eliminated.

hardening facilities, to save space, and to eliminate many defrosting problems. We were able to reduce the required height of hardening rooms by not less than 3 feet. At the present time, we prefer the bin set-up to the low-temperature bower systems.

"A system of truck refrigeration by which hold-over units on the trucks were refrigerated from the plant refrigeration systems was a further load on the latter, in addition to the increased power needed by processing equipment which was converted to direct expansion.

#### TRUCK REFRIGERATION

"Trucks are also provided with their own compressors operating from take-ups on the truck motor or plugged into the power circuit of the plant at night.

"It is many years now since commercial ice cream manufacturers used ice and salt for refrigeration. You can all recall the 3 to 5-ton trucks that would have about 5 tons of ice and salt, and only 1 ton of ice cream.

"Of course, we still use 'sweet ice' to refrigerate some of our milk trucks, but we have also put mechanical refrigeration units (both hold-over and dry ice) into some of our trucks, and they are giving us efficient and economical service and insuring the quality of highly perishable milk products.

"In considering the refrigeration of trucks, it must be borne in mind that ice cream must have temperatures low enough to assist the refrigeration system (that is, the hold-over plates, etc.), and that the truck system should not be expected to act as a hardening unit.

"In my opinion, the temperature at which ice cream should leave the storage room is  $-20^{\circ}\text{F}$ . Of course operation of the truck, opening and closing the doors, etc., will increase this temperature, but with the ice cream itself and the hold-over plates at this  $-20^{\circ}$  to start, the products should not rise above  $10^{\circ}\text{F}$ , the highest temperature to which they should go. Above this danger point the quality of the product might be affected if it had to be returned to storage.

"Of course, the constant renewal of cold, by means of the truck-operated compressor, will eliminate that problem, and give satisfactory operating temperatures for a long period of time.

"In the last few years, there have been many improvements made in dry ice systems for truck refrigeration. With one of these modern

circulating systems for  $\text{CO}_2$  with the controllable valves and proper insulation of the truck body, a highly efficient system is obtained for use under any atmospheric conditions.

"Mechanical service to this type of refrigerator body is, of course, pretty much eliminated.

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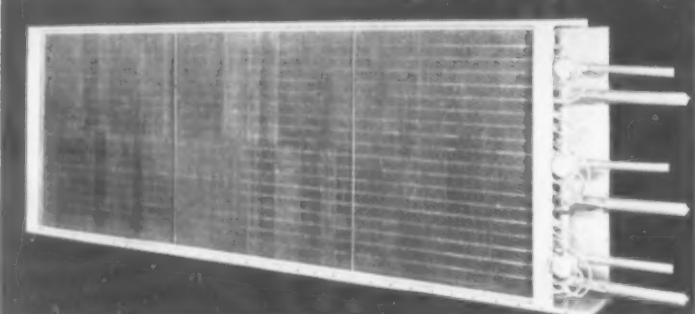
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This handy reference book will save you plenty of headaches

## Control Methods For Flooded Evaporators

### I. High and Low Pressure Float Valves

#### How the 2 Methods Should Be Applied For Proper Operation

**Editor's Note:** This is the first part of an article by Mr. Dube describing various methods of refrigerant control for flooded systems, and the proper application of each method. The balance of Mr. Dube's discussion will be published in early issues of the NEWS.

By J. E. Dube, Alco Valve Co.

Flooded evaporators have received considerable attention by refrigeration engineers due to high heat transfer factors obtainable in well designed low sides of this type. When discussing heat transfer of an evaporator, we must consider three distinct and separate steps, that is, the transfer of the heat from the medium to be cooled (air or brine for example) to the outside surface of the evaporator, the transfer of the heat through the fins and coils of the evaporator, and finally the transfer of the heat from the inside of the evaporator to the refrigerant.

In speaking of increased heat transfer factors of flooded coils, we are concerned only with the third phase of heat flow, that is, the transfer of heat from the inside surface of the evaporator to the refrigerant. This transfer depends largely on the coefficient of thermal conductivity of the refrigerant adjacent to the inside wall of the evaporator.

Liquid refrigerant is a much better conductor of heat than gaseous refrigerant and consequently the highest heat transfer factors will be obtained with evaporators which are thoroughly wetted on the inside by refrigerant in the liquid state.

Simply flooding a low side, however, does not necessarily result in increased overall efficiency. For best results, a flooded evaporator must be skillfully designed and engineered.

This fact may be considered as one of the disadvantages of a flooded system. Proper and skillful engineering becomes of much greater importance than with dry evaporators. Great care must be given to flash gas removal, prevention of gas traps, and proper oil return.

To avoid flood back, gas discharge velocities must be kept low, yet high enough to sustain the proper turbulence and scrubbing effect within the evaporator, so all important to good heat transfer. Often large suction headers or surge drums are advisable.

Proper oil return offers a real problem and requires great care and consideration in flooded evaporator design.

In order to obtain troublefree and highly efficient operation, however, it is of utmost importance to provide adequate and proper control equipment.

At present there are available four different types of controls for flooded evaporators.

1. High pressure float valve
2. Low pressure float valve
3. Float switch
4. Thermo valve

#### High Pressure Float Valve

The high pressure float valve is a liquid control which feeds the liquid refrigerant to the evaporator at the same rate as it accumulates in the receiver. Consequently, nearly all the refrigerant is kept in the evaporator.

The high pressure float valve consists essentially of a float chamber and a valve mechanism which is operated by a float ball. The ball

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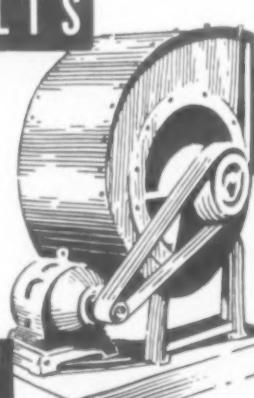
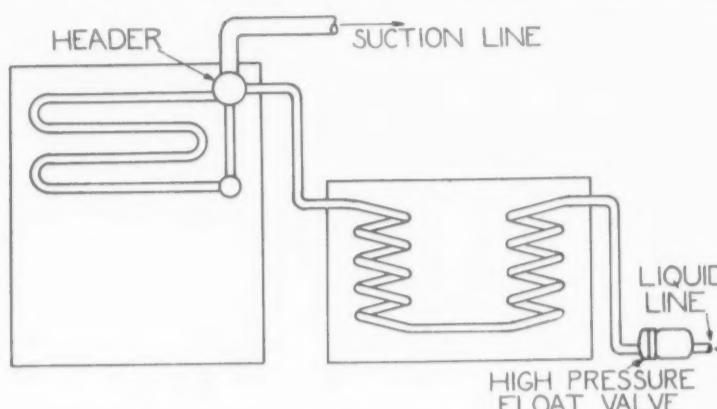


Fig. 1—Where High Pressure Float Valve Is Used



Multiple installation in series using high pressure float valve as refrigerant control.

#### Baker of Fort Worth Completing 3 Locker Plant Installations

FORT WORTH, Tex.—Three locker plant installation contracts are now in the course of completion by Baker Ice Machine Co. of Fort Worth.

At Snyder, Tex., work will soon be completed on a 250-locker plant for Snyder Locker Plant Co. Contracts have been signed with Dalhart Consumers Fuel Association of Dalhart, Tex., for installation of equipment in a plant to have a capacity of 385 lockers. Sedan Cooperative Association, Sedan, Tex., has contracted for building and equipping of a 360-locker plant.

A 150-locker plant, also equipped by the Baker company, was opened recently in Brady, Tex., by Roddie Bros.

#### Locker Plant Regulations Planned in Michigan

LANSING, Mich.—Regulations governing the operation of refrigerated locker plants within the state of Michigan will be promulgated shortly, Elmer A. Beamer, state commissioner of agriculture, declared recently following a meeting with officers of the Michigan Refrigerated Food Locker Plant Association.

During the conference, the locker operators informed Mr. Beamer that some plants required supervision. Byron Watson of Bad Axe, president of the association, asked that the regulations be drawn up cover the sanitary wrapping of meat and require that all food be cooled before quick freezing and be kept after freezing at temperatures below 15°.

#### Locker Plants Contemplated

##### WHAT CHEER, IOWA

WHAT CHEER, Iowa—Work on a locker storage plant with a capacity of 400 lockers will be started here about July 1 by L. A. Sturdevant and Ralph Snodgrass. The plant will be air conditioned. About 70 patrons have signed up.

##### BURKE, S. D.

BURKE, S. D.—G. A. Kallander is contemplating construction of a 140-locker refrigerated storage plant.

##### BELVIEW, MINN.

BELVIEW, Minn.—The Belview Co-Operative Locker System is planning construction of a cold storage locker plant here. Shares in the venture have been sold.

##### STOCKPORT, IOWA

STOCKPORT, Iowa—Gaston Droz has purchased a site and will build a locker storage plant here.

##### HIBBING, MINN.

HIBBING, Minn.—Refrigerated Storage Co. will construct a \$35,000 locker storage plant here. Forrest Grove is firm owner.

##### FROMBERG, MONT.

FROMBERG, Mont.—W. V. Miller is planning construction of a combined locker plant, bar, and apartment living quarters here.

##### WEST POINT, NEB.

WEST POINT, Neb.—The Farmers Union Store is planning to add a refrigerated locker storage plant to its store building here.

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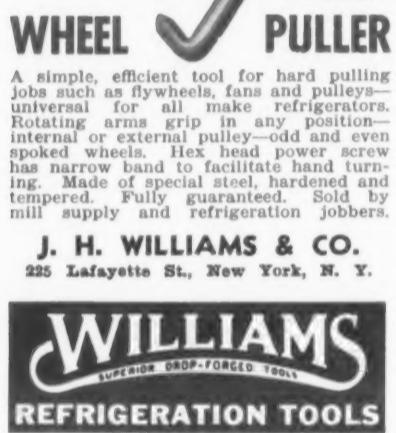
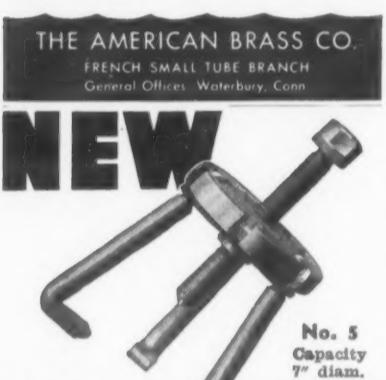
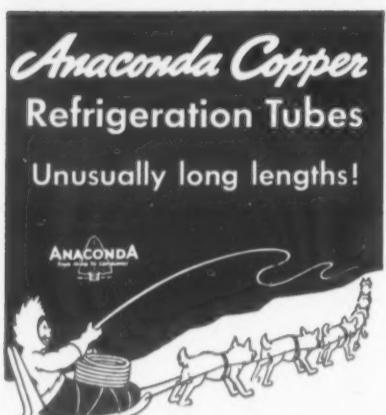


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## Frigidaire Tells Architects & Builders What To Demand In a Refrigerator

### Outline Is Given For Set of Specifications Detail

**Editor's Note:** The following story presents one manufacturer's idea of a set of specifications for household refrigerators that might be demanded by an architect or builder. The editors present it as a report of a manufacturer's activity which may be of interest to the field.

DAYTON, Ohio—A set of specifications for use by builders and architects in specifying household electric refrigerators and electric ranges, in which no reference is made to any individual product, has just been released by the Frigidaire division, General Motors Sales Corp. This set of specifications, it is announced, is intended to supplement any previous assistance available to architects and builders in the selection of refrigeration and cooking equipment.

All details incorporated in the specification sheets were compiled from a study of construction and operation features of most quality brands, so that the information comprising the text is a consolidation of reliable data on the entire field of quality electric refrigerators and electric ranges.

The specification guide, according to its compilers, is an attempt to establish a standard of specifications which will permit an architect to determine more easily what equipment is best adapted to any individual job by supplying authoritative facts on which to base his choice.

#### SEC. 1. GENERAL:

1. These specifications cover electric refrigerators of the front door opening type, for domestic use.
2. Refrigerators shall be of the self-contained, air-cooled, portable type. They shall be completely charged with refrigerant and oil and properly adjusted at the factory so that no further immediate charging, oiling, or adjustment will be necessary.
3. Refrigerators shall be listed under the Underwriters' Laboratories Re-examination Service.
4. Refrigerators shall be constructed of materials that will not impart undesirable odors or tastes to food placed in the storage compartment.
5. All refrigerators shall be the latest models and shall be of a make and type that has been in successful operation for at least two years.

#### SEC. 2. REFRIGERATOR VOLUME AND DIMENSIONS:

1. Refrigerators shall have a net volume (approved Nema rating) of not less than (sizes desired) cubic feet.
2. The total shelf area shall be calculated by the approved Nema rating.
3. Dimensions—refrigerator overall dimensions shall not exceed the following:

	4 cu. ft.	5 cu. ft.	6 cu. ft.
Width .....	25"	30"	32"
Height .....	54"	58"	60"
Depth .....	26"	27"	27"

#### SEC. 3. ICE TRAYS:

1. Each refrigerator shall be provided with aluminum ice trays according to the following schedule:

	4 cu. ft.	5 cu. ft.	6 cu. ft.
Minimum No. trays .....	2	3	4
Minimum lbs. ice total .....	4	6	8

2. Aluminum trays shall be anodically treated.

3. All ice trays shall be equipped with a hand-operated release lever or equivalent means for quickly and effectively loosening frozen-in trays.

#### SEC. 4. REFRIGERATOR CABINET EXTERIOR:

1. Cabinets shall be of all-steel welded construction with exterior surfaces bonded or treated in equivalent manner to resist rusting. Exterior front, sides, and top shall be not less than No. 22 gauge—New U. S. Standard.
2. The outer surface shall be finished with a minimum of one prime coat and one finish coat of white enamel. All coats shall be baked.

3. Provisions shall be made for sealing the outer shell of the cabinet against the entrance of moisture to the insulation in accordance with recognized good practice.
4. The exterior of the cabinet shall not show signs of sweating in a 90° F. room temperature of 70% relative humidity with an average food compartment temperature of 43° F. (This does not apply to the immediate proximity of the refrigerant lines.)

#### SEC. 5. FOOD COMPARTMENT LINER:

1. The food compartment liner shall be of welded steel construction with rounded corners which can be easily cleaned. The steel shall be not less than No. 22 gauge—New U. S. Standard.
2. The inner surface shall be finished with one ground coat and not less than one finish coat of white porcelain enamel. The bottom of the liner shall have a coat of white acid-resisting porcelain enamel, complying with the following test specifications:

Apply 10% solution of acetic acid, allow to remain 30 minutes at room temperature. Wash off with water, dry, and examine for glaze. Wash off with Old Dutch Cleanser, dry, and examine. Should not show signs of staining or loss of glaze.

3. The ground coat shall cover both the inside and outside of the liner.

4. The white porcelain finish shall be glossy, free from objectionable discoloration, cracks, thin spots, holes, or other imperfections and shall show no signs of ground coat where metals have been joined together or at the corners, except where white coat is intentionally wiped.

#### SEC. 6. INSULATION:

1. The insulation of the cabinet and door shall not be less than 2 inches in thickness after assembly and shall have a conductivity of not greater than .28 Btu. per hour per square foot per inch of thickness per degree Fahrenheit temperature difference.
2. The insulation shall be of a type and applied so that it will not settle.

3. Joints between insulation sheets or slabs shall fit snugly so that heat losses will be reduced to a minimum at these points.

#### SEC. 7. SHELVES:

1. The shelves shall be substantially constructed of steel wire electrically welded and shall be so designed that they will not sag more than % of an inch when a weight of 10 lbs. per square foot is uniformly distributed over the shelf. The shelves shall be hot tin dipped after fabrication.

#### SEC. 8. HARDWARE:

1. Hardware shall be of steel, brass, or zinc base, with a chrome finish, or other suitable material.
2. The exterior finish shall be of such quality that it will remain intact when subjected to a 10% salt spray solution as measured by a Saline Hydrometer for a period of 36 hours.

3. The hardware shall be of sturdy construction and shall be attached to the cabinet in a substantial manner.

4. Latches shall be of the self-closing, quick-acting type, which will hold the door tightly closed.

#### SEC. 9. COOLING UNIT:

1. The cooling unit shall be of pressed sheet construction made of brass, stainless steel, or enameled steel finished with vitreous porcelain enamel. Brass evaporators shall be suitably plated to prevent corrosion or tarnishing.
2. The cooling unit shall be rigidly mounted.

#### SEC. 10. CONDENSING UNIT:

1. The condensing unit shall be of the sealed type.
2. Condensing units shall be quiet in operation and free from excessive vibration.

3. Condensing units shall be automatic in operation and require no oiling on the part of the user.

#### SEC. 11. TEMPERATURE CONTROL:

1. Refrigerators shall be equipped with a temperature control which shall be capable of controlling the operation of the condensing units to maintain internal cabinet temperatures of not more than 50° F. in a 110° F. room and not less than 32° F. in a 60° F. room with no food load and the doors closed.

#### SEC. 12. LIGHT:

1. Refrigerators shall be equipped with automatic light, operated by a door switch to illuminate the cabinet interior when the cabinet door is open.

#### SEC. 13. MOTORS:

1. Motors shall be designed for operation on 115 volt, plus or minus 10%, 60 cycle, single phase, alternating current.
2. Motors shall be capable of starting in a temperature of 110° F. on voltage between 90 and 110% of rated voltage (115 volts).

3. A thermal overload shall be provided which will protect the motor against overloads in accordance with the requirements of the National Board of Fire Underwriters.

#### SEC. 14. OPERATING GUARANTEES AND TESTS:

1. The performance of the refrigerators shall be equal to or better than the following minimum values under conditions as specified. Bidders shall submit in their bids guaranteed performance data:

(a) No Load Performance:		Average Cabinet Air Temperature °F.	
Room Temperature °F.	110	Air Temperature °F.	46
Maximum kw. hours per 24 hours			
4 cu. ft.	5 cu. ft.	6 cu. ft.	
1.7	1.8	2.0	

#### (b) Ice Freezing Performance:

1. In a 110° F. ambient with the temperature control set in such a position so as to give an average food compartment temperature of 46° F., the freezing trays shall be filled with a complete charge of 110° F. water and the time required to freeze each tray determined. The current consumption for a 24-hour period in which one complete load of water is frozen shall be noted.

2. The ground coat shall cover both the inside and outside of the liner.

3. The white porcelain finish shall be glossy, free from objectionable discoloration, cracks, thin spots, holes, or other imperfections and shall show no signs of ground coat where metals have been joined together or at the corners, except where white coat is intentionally wiped.

#### (c) Starting Performance:

1. The refrigerating unit shall be capable of starting and running under the following conditions:

2. The complete refrigerator shall be placed in a 110° F. room and with food compartment door open with the unit disconnected for 24 hours. The food compartment door shall then be closed and the unit started and operated for two hours. At the end of two hours the unit shall be stopped and be capable of

restarting with a line voltage of 115 volts, of the rated voltage of 115 volts.

#### (d) General Conditions of Tests:

1. Tests (a) "No Load Performance" and (b) "Ice Freezing Performance" shall be conducted in accordance with the Nema Test Code for Mechanically Operated Household Refrigerators, publication No. 37-41.

For test (a) "No Load Performance," Sections 1 and 2 of the Nema Code shall apply.

For test (b) "Ice Freezing Performance," Section 1 and Section 3, paragraph 67B (110° F. ambient only) of the Nema Code shall apply except that average cabinet air temperature does not need to be plotted.

Test (c) "Starting Performance" shall be conducted as described inasmuch as it is not a part of the Nema Code.

#### SEC. 15. INFORMATION TO BE FURNISHED WITH BID:

1. The following data shall be furnished with each bid.

- (a) Performance data (Nema Test Code).

- (b) Ambient temperature.

- (c) Kw. hour per 24 hours.

- (d) Average watts input.

- (e) Average cabinet air temperature.

- (f) Time required to freeze water in each tray according to test outlined in Section 14, Item 1b.

- (g) Exterior dimensions.

- (h) Net weight, complete refrigerator and cabinet.

- (i) Actual net volume (Nema rating).

- (j) Actual net shelf area (Nema rating).

- (k) Number and capacity of ice trays.

- (l) Thickness, kind, and thermal conductivity of insulation expressed in B.t.u./hr./°F. Temp. diff./in. thickness/sq. ft.

- (m) Description of method of sealing insulation against moisture.

#### SEC. 16. DELIVERY AND INSTALLATION:

1. The contractor shall deliver, uncrate, and install the refrigerators in their respective kitchens and connect them to the electrical outlet supplied by others. The contractor shall put the refrigerator in operation and check to assure satisfactory operation.

#### SEC. 17. GUARANTEE:

1. All refrigerators delivered under this contract shall carry a guarantee, dating from the date of installation, of five years on the sealed-in mechanical unit and one year on the cabinet and controls as defined by a written warranty attached to the contract.

## Westinghouse Equips Room For Refrigerator Noise Test

SPRINGFIELD, Mass.—A new \$5,000 soundproof air conditioned room for testing cooling units of mechanical refrigerators for noise has been constructed at the East Springfield plant of Westinghouse Electric & Mfg. Co.

The room has two walls, the outer one 13 inches thick and the inner one 11 inches thick, with air spaces and sound-deadening materials used to trap noise. Outer wall is of tile, cement, and steel.

The room is floated on springs, and units are carried into it for testing on conveyors through tunnels which also are lined with sound absorbing material. Former room was not quiet enough for testing the new units, and the sound in the general plant makes testing in that area impractical, it was said.

## Knowlson Elected President Of Radio Manufacturers

CHICAGO—James S. Knowlson, president and board chairman of Stewart-Warner Corp., has been elected president of the Radio Manufacturers Association. For the past year Mr. Knowlson has been chairman of RMA's set division.

## Serviceman Extends His Business In Two Directions



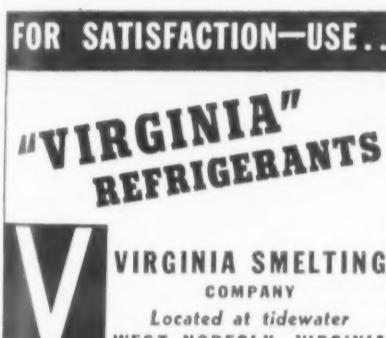
C. J. Roberts stands in one section of the store that he built from a service business.



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GENERAL REFRIGERATION CORP.  
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42 Manifold combinations—2, 3, 4,  
5, 6 or more valves; size  $\frac{1}{4}$ " to  $\frac{1}{2}$ ";  
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—may be readily cut from  
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SPRINGFIELD, Mass.—C. J. Roberts has been in the refrigeration business in Springfield for 12 years. In 1928 he started out as a service man for Kelvinator. Five years later he established his own service business. Today he is still in the service business—but he is also a full-line appliance dealer, and does a nice business in commercial refrigeration and air conditioning.

His expanded business is housed in an attractive building, with a large showroom, a parts department, and a complete repair shop. The firm is now known as C. J. Roberts Engineering Co.

### SERVICE ORGANIZATION

Although his business has grown beyond the service function, Mr. Roberts remains a service man. He traces the growth of his business to service, and chooses to have his company remain "essentially a service organization."

When Mr. Roberts started out, he operated his service business out of his home. As his business grew, he opened a small shop. Realizing that as a service man he had a fine opportunity to sell replacement equipment, that first year he sold 75 household refrigerators to service customers. This convinced him that he should take on a regular line.

By giving high quality service, recommending a replacement only when the service job would be either too costly or unsatisfactory, Mr. Roberts added to his list of service customers, growing to be the largest service organization in the city. As his service customers increased, so did his sales of replacements.

### SERVICE SALESMEN

So far, so good, Mr. Roberts thought. If sales grew from service, why not train his increased service staff to sell? He did just that. When service men went on the job, they gave an estimate of the repairs needed. If, in their honest estimation the repairs would be costly, as compared to buying a new refrigerator, they recommended that the customer buy a new one. Customers had confidence in the service man's judgment, and sales increased.

The same system is still followed, but the firm has added seven salesmen to take care of domestic refrigerator sales. These salesmen follow leads turned in by service men, and also work on cold canvass. Last year, Mr. Roberts reveals, the firm sold 550 household refrigerators; 300 boxes were taken in trade, reflecting the weight of the service man's suggestions for replacement.

Each service call is carefully recorded. Age and condition of the equipment in use in the home is checked for sales follow-up. "The service man," says Mr. Roberts, "has the chance to get in the home first, and we can sell the prospect on reliable information. People are more willing to buy from a service organization."

Through good service, a field for commercial sales was opened up. Service men acted as sales scouts. Now one salesman specializes on commercial sales, getting sales, in many cases, from the leads of service men.

Next step in the growth of the company was to build a healthy year-around business. First a washer business was built up with service again playing a leading role. Then air conditioning, both summer and winter, was added. Service went along with installations. Last year five cooling jobs were installed, the largest of 20-ton capacity. A salesman-engineer has been added to the staff.

### YEAR-AROUND BUSINESS

The entire sales staff has been trained to take advantage of the entrees provided by the large service operation. As salesmen have a number of lines to work on, selling has lost its seasonal aspects.

In explaining the way the sales plan works, Mr. Roberts says: "We have arranged our business and our lines so that we can sell in season. Once we gain entry to a home through service, we have a good chance to sell our other lines. Last year, for instance, we sold 30 electric ranges through this plan. Depending on the season, we have heating, cooling, and a line of major appliances with which we can follow through on our service entree."

### LARGE STOCK OF PARTS

The service department has kept pace with the sales increase, holding to Mr. Roberts' "foundation on service" policy. A large parts department is maintained, so that the service men will have a reservoir of parts to save time. The parts are arranged and labelled to maintain an inventory system for re-ordering. When the service man takes a part from the supply, he notes this on a pad provided for the purpose. A file index is kept, and reserve supplies ordered as the parts are used.

In the service department, the trade-in refrigerators are reconditioned for re-sale. A ready market has been found for reconditioned refrigerators—and again Mr. Roberts gives the credit to service. "Our customers know," he explains, "that these boxes are put in top running order." The firm does not go in very heavily for this trade-in business, reconditioning the trade-ins only to maintain the profit on the sale of new refrigerators.

## THE BUYER'S GUIDE



### AMINCO WATER REGULATING VALVE (Pressure Controlled)

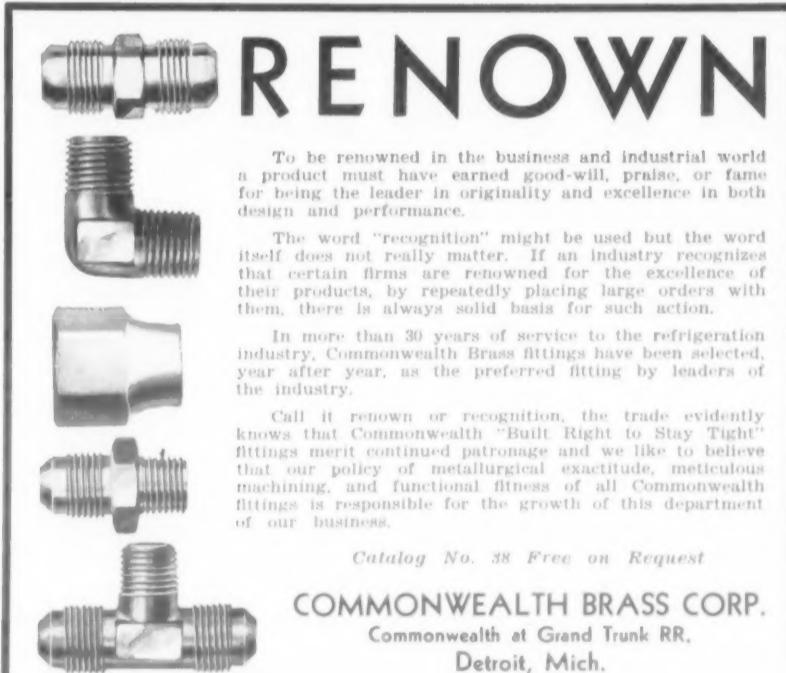
Aminco No. 614 Water Valve is used to regulate the amount of water passing through water-cooled condensers. The valve is quiet in operation, free from chattering; practically friction-free and provides a maximum flow of water with a minimum head pressure differential.

Aminco Water Valves have a double bellows seal, removable body seat and will operate on all refrigerants except ammonia. Standard connections  $\frac{3}{8}$ " x  $\frac{3}{8}$ " F. P. T. Send for Bulletin No. 15.

AMERICAN INJECTOR COMPANY  
1481 FOURTEENTH AVENUE, DETROIT, MICH.  
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.  
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago



KOCH REFRIGERATORS  
NORTH KANSAS CITY, MO.



RENOWN

To be renowned in the business and industrial world a product must have earned good-will, praise, or fame for being the leader in originality and excellence in both design and performance.

The word "renown" might be used but the word itself does not really matter. If an industry recognizes that certain firms are renowned for the excellence of their products, by repeatedly placing large orders with them, there is always solid basis for such action.

In more than 30 years of service to the refrigeration industry, Commonwealth Brass fittings have been selected, year after year, as the preferred fitting by leaders of the industry.

Call it renown or recognition, the trade evidently knows that Commonwealth "Built Right to Stay Tight" fittings merit continued patronage and we like to believe that our policy of metallurgical exactitude, meticulous machining, and functional fitness of all Commonwealth fittings is responsible for the growth of this department of our business.

Catalog No. 38 Free on Request

COMMONWEALTH BRASS CORP.  
Commonwealth at Grand Trunk RR.  
Detroit, Mich.

## More Than Two Hundred of America's Livest Jobbers Sell Ranco

Ranco INC.,  
Columbus, Ohio, USA

Household Refrigerator and  
COMMERCIAL CONTROLS

Write for Names of Jobbers Nearest Your City



Mills Condensing Units  
By Mills Novelty Company  
4100 Fullerton Ave., Chicago, Ill.



**CASH - IN with \$**

**NEW LINE OF DIRECT DRAW BEER COOLERS and Bottled Beverage Coolers.**

**DISTRIBUTORS**  
Write for FREE CATALOG

Coolers are Sold COMPLETE or with All Equipment less the KELVINATOR UNIT

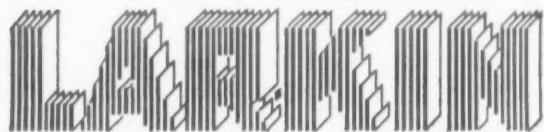
**E. B. MUZZARELLI and COMPANY**  
33d and Main Sts., Kansas City, Mo.

**Model No. 392**

## Capitalize

on the enthusiastic customer acceptance of LARKIN patented continuous cross fin coils with the imbedded fin-to-tube contact—silver welded connections—staggered tubing for maximum heat absorption. Profit makers for dealers everywhere.

See Your Jobber or Write today for New Catalog



**COILS, Inc.**  
519 Fair St., S.E.  
ATLANTA, GA.

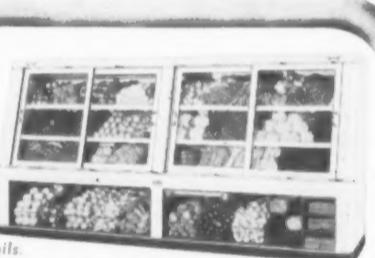
*Originators of The Cross Fin Coil*

### ONLY Sherer HAS THE VEGETAIRE!

The VEGETAIRE pays its way by increasing produce sales... eliminating spoilage and shrinkage. Will pay YOUR way by showing a profit on every sale... by increasing compressor volume.

Write for catalog and franchise details.

SHERER-GILLETT CO., MARSHALL, MICHIGAN



### SPECIAL OFFER \$1850 SERVEL Model J

4 cylinder compressor! New, in original factory crates, ideal replacement unit! Complete with  $\frac{1}{2}$ " SAE intake and  $\frac{1}{2}$ " discharge valves and flywheel. Bore  $1\frac{1}{8}$ ", Stroke  $1\frac{1}{8}$ ".

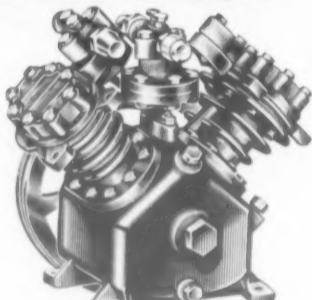
Price in lots 1 to 5 \$20.50

Price in lots 5 to 10 19.50

Price in lots 10 to 25 18.50

For 1/2 and 3/4 H.P. Commercial Units.  
Ideal Replacement Compressor.

NATIONAL ELECTRIC TOOL CO.  
1915 S. State (Ref. Division), Chicago, Ill.



SERVEL MODEL J  
4 cylinder  $1\frac{1}{8}$ " x  $1\frac{1}{8}$ "

### ACCESSORIES?

A Real "Buy"
Size 13" x 8 $\frac{1}{2}$ " x 4 $\frac{1}{4}$ "
Dozen Lots ..... \$6.10
Less 2% or ..... \$5.98 Net
Also Other Sizes Kiln-Run Crispers

Defrosting Trays,  
Dishes, etc., etc.

**THE HARRY ALTER CO.**  
1728 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS  
3 CHICAGO BRANCHES, NORTH, WEST, SOUTH

YES, INDEED, YOU WILL FIND AN EXCELLENT ASSORTMENT IN OUR BIG CATALOG—AT THE RIGHT PRICES... AND THOUSANDS OF REFRIGERATION AND AIR CONDITIONING SERVICE PARTS, ALSO.

NEW YORK BROOKLYN NEWARK DETROIT  
BRONX JAMAICA CLEVELAND ST. LOUIS

*The Simplest and most Versatile Control*

**THE NEW POLARTRON**  
FOR PRESSURE CONTROL UP TO 1 H.P.A.C.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY  
2007 FOURTH AVENUE SOUTH MINNEAPOLIS, MINNESOTA  
MANUFACTURED BY THE POLARTRON COMPANY  
HONEYWELL REGULATOR COMPANY  
REFRIGERATION Control

## What's New

Descriptions of some of the brand new items for the refrigeration and air conditioning, and major appliance fields.

### New Dehumidifying Unit Offered By Aqua-Sorb

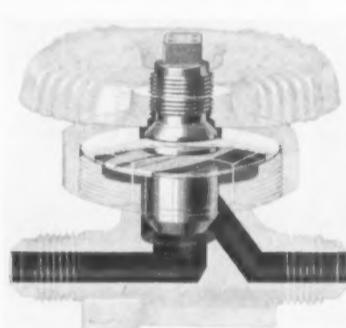
EAST ORANGE, N. J.—A small dehumidifying unit equipped with a blower fan and humidistat has been announced by Aqua-Sorb Co., here. Moist air is drawn upward through a cabinet which contains a 100-lb. tray of "Aqua-Sorb" a dehumidifying agent.

The moisture absorbed forms a

brine which flows downward into a drip pan or drain connection. The Junior model, containing 40 lbs. of Aqua-Sorb, operates without fan or humidistat.

### Smaller Packless Valve Shown By Weatherhead

CLEVELAND—Simplicity of design and low overall height, requiring less installation space, are claimed as features of a new packless

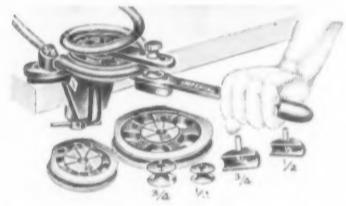


valve announced by Weatherhead Co. Full capacity openings are said to provide a complete flow of refrigerant, and a beryllium copper diaphragm is said to insure fracture-proof and leak-proof construction.

### Tool Bender, Coil Maker Combined By Imperial

CHICAGO—A new bending tool, which will not only bend tubing to any angle, but also can be used for making round or obround coils, has been introduced by the Imperial Brass Mfg. Co.

One tool, complete with attachments, will handle three sizes of soft copper, brass, or aluminum tubing— $\frac{1}{2}$ ,  $\frac{5}{8}$ , and  $\frac{3}{4}$  inch o.d.—in .020 to



.065 inch wall thickness. The tool can also be bought for one size only and attachments added as desired.

The bender clamps on a bench and gives exceptionally good leverage, making bending extremely easy. Bending form is calibrated to show 45°, 90°, 135°, and 180° positions.

Complete tool is designated No. 474-F and sells for \$22. Tools for individual sizes range in price from \$12 to \$14.

### Krack Products Shown In Catalog With Heat Map

CHICAGO—Krack fin coils, unit coolers, and air conditioning coil and fan units are described in the "Krack Products" catalog recently issued by Refrigeration Appliances, Inc. here. The booklet presents products designed to meet a variety of specialized applications in commercial refrigeration and air conditioning.

Coil units, ice cube makers, fan coil units, and plain tube coils making up the Krack line have been designed to meet exacting temperature and humidity specifications encountered in handling many kinds of refrigeration work.

In the air conditioning field "Krack Products" offers self-contained store cooling units, ceiling suspended units, a remote type room cooler, and air conditioning coils for general use.

Coil selection from the Krack catalog is aided by use of a "Temperature Zone Map" which divides the United States into four basic temperature regions, known as the 80° zone, 90° zone, 100° zone, and 110° zone.

### Camera-Size Recorders Announced By Marsh

CHICAGO—A new line of "Serviceman" camera-size recorders has been announced by Jas. P. Marsh Co. Four instruments make up the complete line—a recording thermometer, recording gauge, cycle recorder, and humidity recorder.



Both the recording thermometer and recording gauge are available in ranges covering the normal scope of operation of mechanical equipment. The cycle recorder clearly indicates periods of "on" and "off." The humidity recorder has a range of

### Mu-Switch Designed For Economical Load Control

CANTON, Mass.—A new switch designed to provide an economical means of directly controlling relatively heavy non-inductive loads on direct current with an actuating movement of only .0015 inch has been introduced by Mu-Switch Corp.

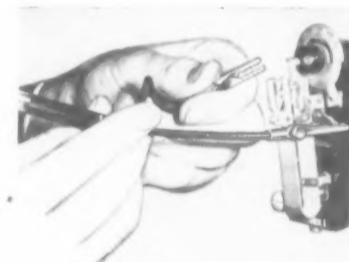
Known as Type D, this switch is said to be capable of handling a direct current load of 17 amperes at 125 volts or 8.5 amperes at 250 volts, thus obviating the need for complicated relay systems and magnetic switches previously required for handling direct current loads in such applications as thermostatically controlled electric heaters.

The new switch is small, measuring only  $2\frac{5}{16}$  x  $1\frac{3}{16}$  x  $1\frac{1}{8}$  inches. It may be actuated by a pressure as low as 24 ounces. Contacts are of a special non-sticking alloy, and are claimed to be capable of handling the full direct current load without external protective devices.

Switch housing is of moulded plastic capable of withstanding temperatures up to 900° F.

### Low Voltage Pocket Tester Introduced By Littelfuse

CHICAGO—Designed primarily for use on 24-volt systems in heating and air conditioning, a new low-voltage "Tattelite" pocket tester has been introduced by Littelfuse, Inc.



Inc. The tester covers the range from 3 to 25 volts, momentary up to 50 volts, a.c. and d.c., using a high temperature coefficient lamp to cover this range.

The lamp is housed in a molded, transparent Tenite case, and has tinsel wire leads and alligator clips. The device also is said to be adaptable to circuit checking in low-voltage motors. Retail price is \$1.75.

### Metal Fabrication Method Combines 2 Processes

CHICAGO—A new four-page bulletin describing the industrial application of the new Lindsay Structure method of combining steel sheets and framing has just been released by Dry-Zero Corp.

This bulletin explains the basic principle of this method of metal fabrication, and lists its advantages when used as a housing cabinet for air conditioning units, frozen food lockers, or cold storage rooms, as well as other industrial structures.

### Hardy-MAYFLOWER commercial compressors

are a sure guarantee of satisfaction

**Hardy Manufacturing Co., Inc.**  
126 Davis Ave., Dayton, O.



## SPORLAN VALVES

**4E Frozen Food Lockers**  
Sold Only Through Dealers  
Will Add to Your Income  
Quickly, Easily  
Write for Descriptive Folder  
**ALL-STEEL-EQUIP CO., INC.**  
106 Kensington Ave., Aurora, Ill.

**DEPENDABLE COILS--UNITS**  
**mQuay Inc. MINNEAPOLIS MINN.**

**We Sell Only Thru**  
Distributors of refrigeration and insulation.  
Get particulars on our  
**HydroLoc Individual Lockers**  
the locker that has popular demand.  
Master Refrigerated Locker Systems, Inc.  
121 Main St., Sioux City, Iowa  
149,500 Masterbuilt Lockers in Use

**The Most Accurate Control Valve for Small Capacity Systems**  
**ALCO**

**The "TK" Thermo Valve**  
Alco Valve Co., St. Louis, Mo.

**Use CHICAGO SEALS for seal replacements**  
A complete line in all sizes  
**CHICAGO SEAL CO.**  
20 North Wacker Dr., Chicago

**COMPRESSORS FOR EVERY COMMERCIAL PURPOSE**  
**M&E EST. 1866**  
Merchant & Evans Co.  
PHILADELPHIA, PENNA.

**Send for your COPY OF "FIN COIL ENGINEERING"**  
**REMPER CO.**  
349 N. SACRAMENTO BLVD., CHICAGO, IL  
2953 E

**ACME INDUSTRIES, INC.**  
JACKSON MICHIGAN  
**OIL SEPARATORS**

**Refrigeration and Air Conditioning**  
**AIRD** PARTS-TOOLS-SUPPLIES Wholesale Only  
2732 W. ASHLAND AVE.  
CHICAGO ILLINOIS  
Write for catalog **ASCO** on your letterhead

**BUNDY TUBING**  
Copper-Brazed Steel. Copper Coated Inside and Out. Sizes:  $\frac{1}{8}$ " to  $\frac{1}{2}$ " O.D.  
**BUNDY TUBING CO., DETROIT**

**For Information on Motors**  
FOR ALL TYPES OF  
Air Conditioning and  
Refrigeration Equipment  
WRITE TO  
**Wagner Electric Corporation**  
ST. LOUIS, MO.

**New Demonstrator Is 'Glassed In' System**

Dan Wile, chief engineer of Savage Arms Corp., refrigeration department, and inventor of novel methods for teaching principles of refrigeration operation, works with his new "all-in-glass" ice cream cabinet refrigerating system in teaching a group of service men.

**Savage Arms Takes New Demonstrator on Road**

UTICA, N. Y.—Workings of the detailed parts of a Savage ice cream cabinet are revealed in a glassed-in demonstrator now being shown to service men in a series of schools conducted by the refrigeration division of Savage Arms Corp. in various parts of the country.

The demonstrator unit contains a glass float, glass evaporator, and glass accumulator, which permit inspection of actual operation of the different elements under normal operating conditions. A special glass reservoir permits the operator also to create abnormal conditions, by flooding or starving the evaporator, to demonstrate what happens to refrigerating processes under these conditions.

**Anaconda Copper Refrigeration Tubes**

Unusually soft!



**THE AMERICAN BRASS CO.**  
FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.

**Sells Faster Because It Cools Faster!**  
**IDEAL SPEED COOLER**  
Ideal Beer Cooler Co.  
2953 Easton Ave., St. Louis, Mo.

**MORE MONEY**

For You with  
ROTARY SEAL  
Replacement Units



**PENN Leads in AUTOMATIC SWITCHES AND CONTROLS**  
Write for Catalog  
**PENN ELECTRIC SWITCH CO.**  
GOSHEN, INDIANA

**Dayton V-BELTS**  
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.  
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO  
World's Largest Manufacturer of V-Belts

**CLASSIFIED ADVERTISING**

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00. additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

**POSITIONS WANTED**

YOUNG SINGLE MAN, age 26, high school and Industrial Training Institute graduate, now employed, desires new connection. Opportunity wanted with starting salary of secondary importance. Refrigeration or air conditioning. One year shop experience in manufacture of water coolers, beverage cooling and dispensing equipment. Excellent references. Box No. 1238, Air Conditioning & Refrigeration News.

**SALESMEN WANTED**

SALESMAN TO sell refrigerator display cases, walk-in coolers, reach-in refrigerators, refrigerating units to meat markets, grocers, taverns and other businesses. Many good territories open in every state. When answering give full information of your past selling experience. EHRLICH REFRIGERATOR MFG. CO., Dept. A, St. Joseph, Mo.

**REPRESENTATIVES WANTED**

MANUFACTURERS' AGENTS, jobbers, and dealers to handle a nationally known line of air circulators, exhaust fans, etc. Exceptional in design and a fine supplement to air conditioning. Box No. 1241, Air Conditioning & Refrigeration News.

**FRANCHISES AVAILABLE**

INVESTIGATE the possibilities for profits this season with the new "Magic-Flo" Beer Dispensing System. Priced to sell. Direct from manufacturer. Inquiries from responsible dealers solicited. Write for territories available. BEER SYSTEMS CORPORATION, 1400 W. 25th Street, Cleveland, Ohio, Dept. MF 101.

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

**BUSINESS OPPORTUNITIES**

MANUFACTURING Refrigeration Parts and Service. Largest in United States doing National business by mail and for cash only. Specializing in rebuilding various domestic units, sales of parts, and a monopoly on Nationally known refrigerator and radio parts business. Volume about \$50,000 with approximate net profit of \$10,000 for past four years. For sale \$15,000. This business will liquidate for nearly this. Month's trial offered if wanted. Very good reason for selling. Full details furnished. Box No. 1239, Air Conditioning & Refrigeration News.

Number, average retail price, and retail value of household refrigerator world sales by U. S. manufacturers, up to 1920 and each year since then.

Number of household refrigerators sold in each state by manufacturers in the National Electrical Manufacturers Association (Nema) by years, 1934-1939.

Number, average retail price, and retail value of household refrigerator world sales by U. S. manufacturers, up to 1920 and each year since then.

Number of wired homes, farms, and places of business in each state, 1939.

Number, type, and size of household refrigerator equipment sold by all manufacturers in the Nema group to domestic, Canadian, and other foreign markets each month, 1938-1939, and each year, 1935-1939.

Number of household refrigerator (Nema) sales in each state for each month, 1938-1939.

Number of all household refrigerator sales in each state, 1932-1937.

Number, retail value, and average price of household refrigerator sales in Philadelphia area for each month, 1936-1939.

**COMMERCIAL SALES**

Quantity and dollar value, type, and size of commercial refrigerating equipment sold by manufacturers in the National Electrical Manufacturers Association (Nema) to domestic, Canadian, and other foreign markets each month, 1938-1939, and each year, 1935-1939. The same statistics on Nema air conditioning equipment sales are included by months for 1938 and by years for 1936 and 1937.

**EXPORTS**

Quantity and dollar value of household and commercial refrigeration products and dollar value of all parts exported to every country (U. S. government figures), 1935-1939.

Total dollar value of air conditioning exports to major countries, 1938-1939, and to all countries including ice-making equipment, 1937.

**EQUIPMENT FOR SALE**

BRAND NEW air cooled High Sides at exceptionally low prices. These condensing units are complete, ready to be plugged in. They are made up with all new parts: General Electric or Frigidaire Compressor, General Electric or Delco Motor, heavy duty condenser, heavy base, receiver, valves, etc.; charged with Methyl or "Freon." They are available in  $\frac{1}{2}$ - $\frac{1}{4}$  and  $\frac{1}{4}$  H.P. GENERAL REFRIGERATORS CORPORATION, 518 East 20th Street, New York, N. Y.

**EQUIPMENT WANTED**

WE BUY surplus and discontinued portable air conditioning units when offered at attractive prices. Advise quantity and size of equipment available and why; state price and furnish descriptive circulars. Also furnish some evidence of original retail price. Also interested portable heaters. AMERICAN APPLIANCE COMPANY, 1216 Southwest 8th Street, Miami, Fla.

WE WILL Purchase Manufacturers' Jobbers' Dealers' surplus equipment.

We are interested in purchasing an unlimited quantity of commercial condensing units from  $\frac{1}{2}$  hp. to 3 hp. inclusive,

air and water-cooled for methyl, "Freon," sulphur.

Also interested in valves, controls of all types, strainers, compressors, motors all hp, ac, dc and all accessories. Please send us full particulars on above. R. & R. REFRIGERATION JOBBERS, 508 Morris Ave., Bronx, N. Y.

**REPAIR SERVICE**

WORLD'S LARGEST rebuilders of refrigeration units. Original, Genuine Majestic replacement units and parts for refrigerator and radio. Rebuilders of Majestic, General Electric, Grunow, Westinghouse, Coldspot, Servel, Gibson units at \$25 up with 18 months' guarantee protection bond. 500 units on hand. Send for catalog. G & G GENUINE MAJESTIC REFRIGERATOR & RADIO PARTS SERVICE, 2429 Wabash Ave., Chicago.

**FREE HERMETIC CATALOG** complete with prices on refrigerator units, rebuilding and exchange service. General Electric, Westinghouse, Majestic, Frigidaire and a complete stock of Grunow compressors and parts. Immediate shipment. For your copy specify catalog A. **SERVICE PARTS COMPANY**, 1101-3 North 24th Avenue, Melrose Park, Illinois.

**CONTROLS RECONDITIONED** like new. Precision work by experts. "Years of Satisfied Customers," our motto. All work guaranteed for one year. Try us and be convinced of our unexcelled service. Special prices in quantity lots. For further information write: UNITED REPAIR CO., INC., 342 W. 70th St., New York City.

**CONTROL REPAIR** service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1783 Lakeview Road, Cleveland, Ohio.

**PATENTS**

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

**Filtrine**  
Water Coolers—Filters  
Cafeteria—Industrial  
Commercial Remote  
Surge Tanks Pipe Coils  
Filtrine Mfg. Co., Brooklyn, N.Y.

**THE BUYER'S GUIDE****DICELER 4 CYLINDER UNITS**

For Design, Construction and Service the most is offered by DICELER. You'll find it worth your while to get all the facts about DICELER compressors in both air and water cooled models from  $\frac{1}{2}$  H.P. to 30 H.P. Write for the DICELER catalogue and learn how you can gain greater sales and increased profits.

THE CONDENSING UNIT LINE WITH EXCLUSIVE FEATURES  
**DEISSLER MACHINE COMPANY** Greenville, Pa.  
Export Dept., 100 Variick Street, New York.  
PIONEER OF FOUR CYLINDER REFRIGERATION

**MAKE BIGGER PROFITS**

TYLER full line dealers and distributors are setting records for sales and profits. Tyler's big line enables you to completely outfit modern food stores and opens up hundreds of live prospects in other fields. Famous Welded Steel construction. Phenomenal value. Display cases, Walk-In Coolers, Reach-In Coolers, Walk-In Freezers, Walk-In Ice-Makers, Display Cases, Reach-Ins, and special type refrigerators to fit all needs. Every one a super value. Write for details.

TYLER FIXTURE CORP., Dept. E, Niles, Mich.

New York Office: 601 W. 76th St.  
Boston Office: 603 Beacon St. Chicago Office: 1663 W. Ogden Ave.

**TYLER** WELDED STEEL **Refrigerators**

**Chieftain**

The Chieftain Hermetic is completely sealed in a tamper-proof shell. This construction is endorsed by many thousands of satisfied users.

**TECUMSEH PRODUCTS CO., TECUMSEH, MICH.**  
Canadian distributor: Refrigeration Supplies Co., Ltd., London, Ontario

To Make a tight connection that will STAY tight  
**USE IMPERIAL TRIPLE SEAL FITTINGS**  
THE flare extrudes into THE groove making a leak proof joint even when seat has been badly nicked or marred.  
Ask your Jobber about Triple Seal Fittings  
IMPERIAL BRASS MFG. CO.  
565 S. Racine Ave., Chicago  
VALVES • FITTINGS • TOOLS  
CHARGING LINES • FLOATS  
STRAINERS • DEHYDRATORS

**Nearly 40 years experience**

The solution to drinking water problems is found in the Puro line . . . a complete line. Write for franchise information.

**ELECTRIC WATER COOLERS**

Puro Filter Corp. of America, 440 Lafayette St., New York.

**OVALINE HAND-WHEEL**  
Its exclusive oval shape provides a really natural gripping surface.  
RECOMMENDED AND SOLD BY LEADING JOBBERS  
**HENRY BALANCED-ACTION DIAPHRAGM PACKLESS VALVES**  
HENRY VALVE CO.  
1001-19 N. SPAULDING AVE.  
CHICAGO, ILL.

## Distributors Move To Check 'Double Billing'

(Concluded from Page 1, Column 2) participation in cooperative advertising with dealers.

Because there is no "Standard Rate and Data" book for the type of newspapers in question, the plan simply has attempted to do about what an Audit Bureau of Circulation rating for a metropolitan paper would do in establishing accurate circulation figures as a basis for rates, through determining whether publishers are quoting the same figures to all.

The group is not attempting to drive rates down.

If a dealer obtains a still lower rate from a given paper by reason of contract, volume, or other considerations, the distributor reasonably expects his 50% cooperation to be handled on that basis—not on an open rate, the distributor group avers. Those engaged in the discussions do not say, however, that a dealer may not go higher than the predetermined "standardized rate," provided he pays the difference.

Belief has been expressed at these sessions that papers of this class are shortsighted in feeling they can sell only by means of suggesting double-billing, and it has been pointed out that manufacturer and distributor alike are not so much concerned with the cost of cooperative advertising as in getting what they pay for.

Since the advertising appropriation is always available, it is asserted, papers would probably get more space if their charges were fixed on an equitable basis.

No justification can be seen, however, for allowing one dealer a lower rate than another—wide deviations in distributor costs in the same publications were noted particularly in early sessions—nor for giving the dealer a receipt for an amount he has not paid.

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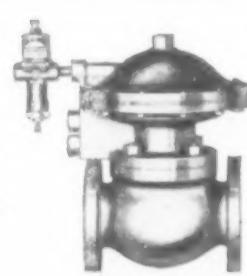
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## NEW!!!

**At Last A Big  
WATER REGULATOR  
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3, 4, AND 5 SIZES**

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2100 Indiana Ave., Chicago, U.S.A.



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# Air

The Newspaper of

VOL. 30, NO. 10. ESTABLISHED 1926

## IN THIS

### Quizzes For Prospects

Quiz question radio swept to a top spot in radio, and a wide-area dealer cashes in running a quiz contest with his store demons and pictures, page 7.

### Selling the Sizzle

"Don't sell the sizzle," is a "Wheelership" theme. The Chiodo boys in beer cooling equipment, N. Y., applies selling bar equipment, getting the refrigerator matter of course, page 7.

### What Goes On

What's happening on line in household refrigeration. One of the News' editors Illinois oil-boom country refrigerators are being fast) and in the first field reports gives today's market, page 8.

### Flooded Evaporator

With attention again on flooded systems in work, the News presents in a series of articles control in flooded evap. 13.

### Shifts

The shifting sands Field and factory shifts and dealer enfranchised recorded on page 9.

### Contest of Skill

Tube bending contest an opportunity for skill demonstrate their skill the soldering contest Mueller Brass Co., and page 11.

### Truckin' Em Cold

Transportation of foods by mechanically is a rapidly growing refrigeration market systems for this job on page 12.

### Other Departments

Air conditioning supply jobber activities "What's New," page 14.

### V. E. 'Sam' Vining

New Job; Imhoff At P.

PHILADELPHIA—Sam Vining has resig. of department stores for Westinghouse. Concluded on Page 14.

### Makes a



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the Newspaper of the Industry  
VOL. 30, NO. 10, SERIAL NO. 1  
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**IN THIS ISSUE**

**Quiz For Prospects**  
Chief engineer of Savage refrigeration department of novel methods principles of refrigeration, works with his new ice cream cabinet system in teaching a vice men.

**ing the Sizzle**  
Don't sell the steak, and he, is a "Wheelerpoint" of a ship. The Chiado Brothers' beer cooling equipment in New York, N. Y., applies that interesting bar equipment first, in the refrigeration work of course. Page 5.

**It Goes On**  
What's happening out on the household refrigeration of the News editors goes to oil-boom country where generators are being sold, and in the first of a series of reports gives one picture's market. Page 6.

**ded Evaporator Control**  
With attention again being focused on flooded systems in refrigerators, the NEWS presents the second series of articles on refrigeration control in flooded evaporators.

The shifting sands of business and factory shifts in personal dealer franchises are detailed on page 9.

**test of Skill**  
Bending contests have offered opportunity for service men to demonstrate their skill. Now comes a soldering contest sponsored by Brass Co. and described on page 11.

**In 'Em Cold**  
Transportation of refrigerators by mechanically cooled trucks in rapidly growing phase of refrigeration market. Two reasons for this job are described on page 12.

**Departments**  
Conditioning news, page 10; jobber activities, page 11; "New," page 14.

**E. 'Sam' Vining Has New Job; Joins Imhoff At Proctor**

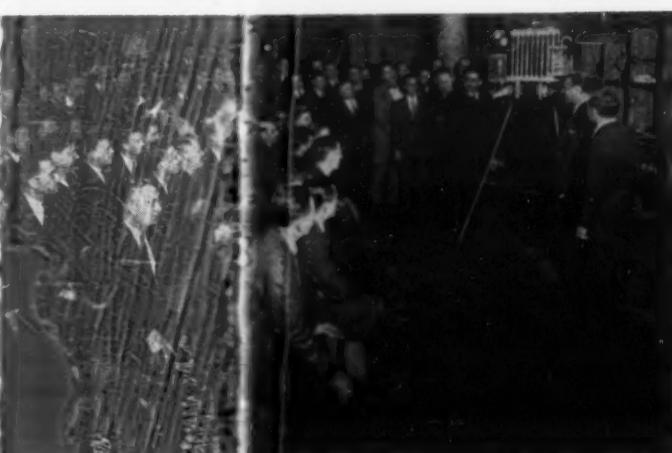
**LADEPHIA** Vernon Vining has resigned as manager of department store appliance for Westinghouse Electric Co. manufacturer. See "Obituaries" on page 2, Column 1.

**Makes a Shift**

**Leads in**  
**STATIC SWITCHES**  
**CONTROLS.**  
See for Catalog  
**ELCTRIC SWITCH CO.**  
BISHEN, INDIANA

**Dayton**  
**V BELTS**

**VERNON E. VINING**

**Demonstrator Is 'Glossed In' System****Market Data Book For 1935-1939 Is Compiled By News**

Detailed statistics on refrigeration and air conditioning equipment sales for the years 1935 through 1939 are now available in a neat, 83-page looseleaf book issued by the Business News Publishing Co., 5229 Cass Ave., Detroit, Mich.

Designed to meet a demand for compact, readily accessible data on household and commercial refrigeration equipment sales and markets throughout the world, this book is 9 x 11 inches in size, printed on durable paper. Price of the book is \$10.00.

These statistics have been published, when obtained, in AIR CONDITIONING & REFRIGERATION NEWS and now they have all been collected together in an easy-to-use book.

The new "Sales Statistics and Market Data" book brings up to date the sales statistics contained in the "1935 Refrigeration and Air Conditioning Market Data Book," copies of which are still available at a reduced price of \$2.00.

Here is what the book contains:

**HOUSEHOLD SALES**

Number of world sales of household electric refrigerators each month, with yearly totals (all years inclusive), 1935-1939.

Cumulative world sales, including exports, retirements, distributor and dealer stocks, total number of refrigerators in use in the U.S.A., number of wired homes, and market saturation percentages, by years, 1934-1939.

Number, average retail price, and retail value of household refrigerator world sales by U. S. manufacturers, up to 1920 and each year since then.

Number of household refrigerators sold in each state by manufacturers in the National Electrical Manufacturers Association (Nema) by years, 1934-1939.

Number of wired homes, farms, and places of business in each state, 1939.

Number, type, and size of household refrigerator equipment sold by all manufacturers in the Nema group to domestic, Canadian, and other foreign markets each month, 1938-1939, and each year, 1935-1939.

Number of household refrigerator (Nema) sales in each state for each month, 1938-1939.

Number of all household refrigerator sales in each state, 1932-1937.

Number, retail value, and average price of household refrigerator sales in Philadelphia area for each month, 1936-1939.

**COMMERCIAL SALES**

Quantity and dollar value, type, and size of commercial refrigerating equipment sold by manufacturers in the National Electrical Manufacturers Association (Nema) to domestic, Canadian, and other foreign markets each month, 1938-1939, and each year, 1935-1939. The same statistics on Nema air conditioning equipment sales are included by months for 1938 and by years for 1936 and 1937.

**EXPORTS**

Quantity and dollar value of household and commercial refrigeration products and dollar value of all parts exported to every country (U. S. government figures), 1935-1939.

Total dollar value of air conditioning exports to major countries, 1938-1939, and to all countries including ice-making equipment, 1937.

**CLASSIFIED ADVERTISING**

**RATES:** Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

**PAYMENT** in advance is required for advertising in this column.

**REPLIES** to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

**POSITIONS WANTED**

YOUNG SINGLE MAN, age 26, high school and Industrial Training Institute graduate, now employed, desires new connection. Opportunity wanted with starting salary of secondary importance. Refrigeration or air conditioning. One year shop experience in manufacture of water coolers, beverage cooling and dispensing equipment. Excellent references. Box No. 1238, Air Conditioning & Refrigeration News.

**SALESMEN WANTED**

SALESMAN TO sell refrigerator display cases, walk-in coolers, reach-in refrigerators, refrigerating units to meat markets, grocers, taverns and other businesses. Many good territories open in every state. When answering give full information of your past selling experience. EHRLICH REFRIGERATOR MFG. CO., Dept. A, St. Joseph, Mo.

**REPRESENTATIVES WANTED**

MANUFACTURERS' AGENTS, jobbers, and dealers to handle a nationally known line of air circulators, exhaust fans, etc. Exceptional in design and a fine supplement to air conditioning. Box No. 1241, Air Conditioning & Refrigeration News.

**FRANCHISES AVAILABLE**

INVESTIGATE the possibilities for profits this season with the new "Magic-Flo" Beer Dispensing System. Priced to sell. Direct from manufacturer. Inquiries from responsible dealers solicited. Write for territories available. BEER SYSTEMS CORPORATION, 1400 W. 25th Street, Cleveland, Ohio, Dept. MF 101.

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

**BUSINESS OPPORTUNITIES**

MANUFACTURING Refrigeration Parts and Service. Largest in United States doing National business by mail and for cash only. Specializing in rebuilding various domestic units, sales of parts, and a monopoly on Nationally known refrigerator and radio parts business. Volume about \$50,000 with approximate net profit of \$10,000 for past four years. For sale \$15,000. This business will liquidate for nearly this. Month's trial offered if wanted. Very good reason for selling. Full details furnished. Box No. 1239, Air Conditioning & Refrigeration News.

REFRIGERATING ENGINEER, holding fully protected designs on soundly engineered packaged locker storage units, desires to contact manufacturer of commercial equipment, or financially responsible individual, to promote production and sales. Extensive engineering and sales research completed and merchandising commitments already obtained from several leading sales organizations, assuring immediate volume outlet. Box 1242, Air Conditioning & Refrigeration News.

**EQUIPMENT WANTED**

WE BUY surplus and discontinued portable air conditioning units when offered at attractive prices. Advise quantity and size of equipment available and why; state price and furnish descriptive circulars. Also furnish some evidence of original retail price. Also interested portable heaters. AMERICAN APPLIANCE COMPANY, 1216 Southwest 8th Street, Miami, Fla.

WE WILL Purchase Manufacturers' Jobbers' Dealers' surplus equipment. We are interested in purchasing an unlimited quantity of commercial condensing units from  $\frac{1}{2}$  hp. to 3 hp. inclusive, air and water-cooled for methyl, "Freon" sulphur. Also interested in valves, controls of all types, strainers, compressors, motors all hp. ac. dc and all accessories. Please send us full particulars on above. R & R REFRIGERATION JOBBERS, 508 Morris Ave., Bronx, N. Y.

**EQUIPMENT FOR SALE**

BRAND NEW air cooled High Sides at exceptionally low prices. These condensing units are complete, ready to be plugged in. They are made up with all new parts; General Electric or Frigidaire Compressor, General Electric or Delco Motor, heavy duty condenser, heavy base, receiver, valves, etc.; charged with Methyl or "Freon." They are available in  $\frac{1}{2}$ - $\frac{1}{4}$  and  $\frac{1}{2}$  H.P. GENERAL REFRIGERATORS CORPORATION, 518 East 20th Street, New York, N. Y.

**REPAIR SERVICE**

WORLD'S LARGEST rebuilders of refrigeration units. Original, Genuine Majestic replacement units and parts for refrigerator and radio. Rebuilders of Majestic, General Electric, Grunow, Westinghouse, Coldspot, Servel, Gibson units at \$25 up with 18 months' guarantee protection bond. 500 units on hand. Send for catalog. G & G GENUINE MAJESTIC REFRIGERATOR & RADIO PARTS SERVICE, 2429 Wabash Ave., Chicago.

**FREE HERMETIC CATALOG** complete with prices on refrigerator units, rebuilding and exchange service. General Electric, Westinghouse, Majestic, Frigidaire and a complete stock of Grunow compressors and parts. Immediate shipment. For your copy specify catalog A. SERVICE PARTS COMPANY, 1101-3 North 24th Avenue, Melrose Park, Illinois.

**CONTROLS RECONDITIONED** like new. Precision work by experts. "Years of Satisfied Customers," our motto. All work guaranteed for one year. Try us and be convinced of our unexcelled service. Special prices in quantity lots. For further information write: UNITED REPAIR CO., INC., 342 W. 70th St., New York City.

**CONTROL REPAIR** service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

**PATENTS**

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

**Filtrine**

**Water Coolers—Filters  
Cafeteria—Industrial  
Commercial Remote  
Surge Tanks Pipe Coils**  
Filtrine Mfg. Co., Brooklyn, N.Y.

**THE BUYER'S GUIDE****DICELER 4 CYLINDER UNITS**

For Design, Construction and Service the most is offered by DICELER. You'll find it worth your while to get all the facts about DICELER compressors in both air and water cooled models from  $\frac{1}{2}$  H.P. to 30 H.P. Write for the DICELER catalogue and learn how you can gain greater sales and increased profits.

THE CONDENSING UNIT LINE WITH EXCLUSIVE FEATURES  
DEISSLER MACHINE COMPANY Greenville, Pa.  
Export Dept., 100 Varick Street, New York.  
PIONEER OF FOUR CYLINDER REFRIGERATION

**MAKE BIGGER PROFITS**

TYLER full line dealers and distributors are setting new records for sales and profits. Tyler's big line enables you to completely outfit modern food stores and opens up hundreds of live prospects in other fields. Famous Welded Steel construction. Phenomenal Vegetable Display Cases. Reach-In Walk-In Vegetable Displays. Reach-In and special type refrigerators to fit all needs. Every one a super value. Write for details.

TYLER FIXTURE CORP., Dept. E, Niles, Mich.  
New York Office: 601 W. 26th St.  
Boston Office: 693 Beacon St.  
Chicago Office: 1663 W. Ogden Ave.

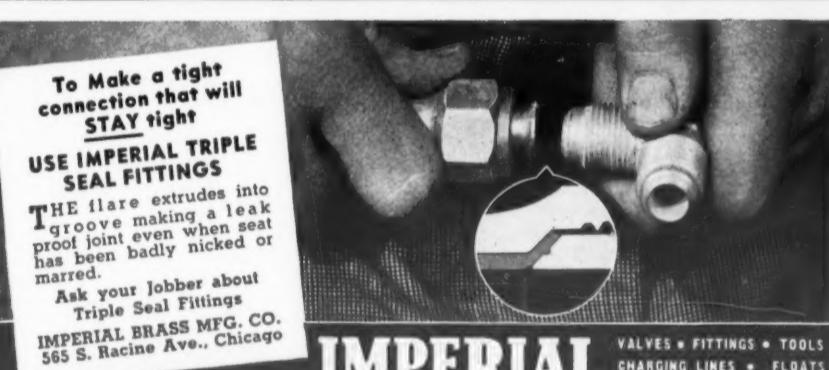


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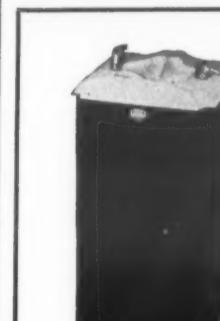
**Chieftain**

The Chieftain Hermetic is completely sealed in a tamper-proof shell. This construction is endorsed by many thousands of satisfied users.

TECUMSEH PRODUCTS CO., TECUMSEH, MICH.  
Canadian distributor: Refrigeration Supplies Co., Ltd., London, Ontario

**IMPERIAL**

VALVES • FITTINGS • TOOLS  
CHARGING LINES • FLOATS  
STRAINERS • DEMONSTRATORS



Nearly 40 years experience  
The solution to drinking water problems is found in the Puro line . . . a complete line. Write for franchise information.

**Puro**  
WATER  
TRADE MARK

ELECTRIC WATER COOLERS  
Puro Filter Corp. of America, 440 Lafayette St., New York.



## Distributors Move To Check 'Double Billing'

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Because there is no "Standard Rate and Data" book for the type of newspapers in question, the plan simply has attempted to do about what an Audit Bureau of Circulation rating for a metropolitan paper would do in establishing accurate circulation figures as a basis for rates, through determining whether publishers are quoting the same figures to all.

The group is not attempting to drive rates down.

If a dealer obtains a still lower rate from a given paper by reason of contract, volume, or other considerations, the distributor reasonably expects his 50% cooperation to be handled on that basis—not on an open rate, the distributor group avers. Those engaged in the discussions do not say, however, that a dealer may not go higher than the predetermined "standardized rate," provided he pays the difference.

Belief has been expressed at these sessions that papers of this class are shortsighted in feeling they can sell only by means of suggesting double-billing, and it has been pointed out that manufacturer and distributor alike are not so much concerned with the cost of cooperative advertising as in getting what they pay for.

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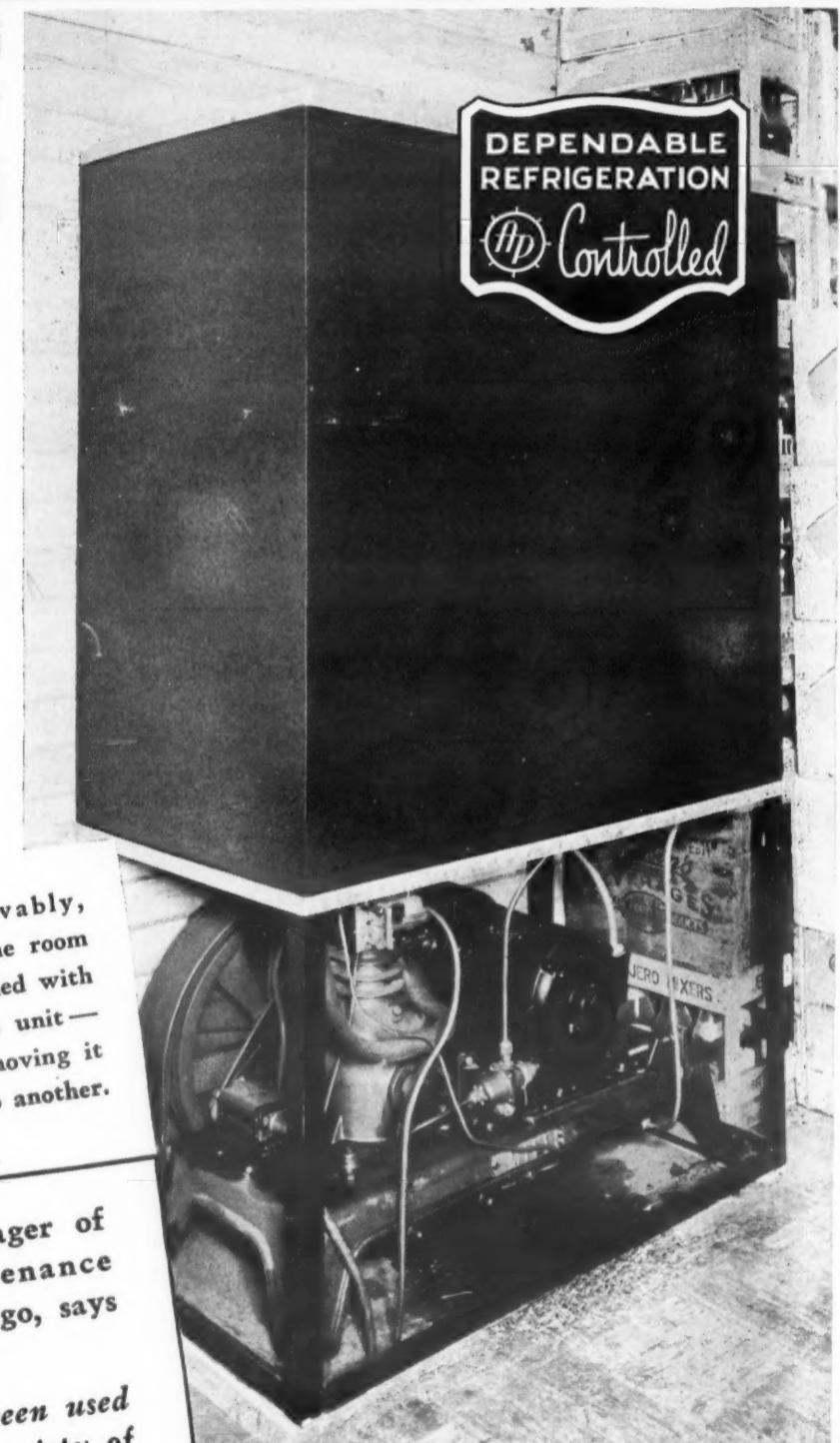
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### MODEL 205

Thermostatic Expansion Valve Capacity:  
Commercial . . . 1 Ton Freon  
Air Conditioning . . . 2 Tons Freon  
Full liquid charged power element permits installation in any position or ambient temperature. Maintains straight line Superheat over wide temperature range.



## AUTOMATIC PRODUCTS COMPANY

2450 NORTH THIRTY—SECOND STREET

MILWAUKEE



WISCONSIN

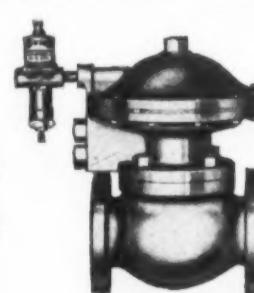
Export Department

100 Varick Street, New York City

## NEW!!!

At Last A Big WATER REGULATOR . . . That Modulates 3, 4, AND 5 SIZES

THE ELECTRIMATIC CORP.  
2100 Indiana Ave.



TYPE  
W.I.

PROGRESSIVE SERVICE MEN USE AND RECOMMEND—AND AGGRESSIVE JOBBERS STOCK AND TALK—AP PRODUCTS